

*A Short History
of
Prairie Agriculture*

By

H. G. L. STRANGE

SEARLE GRAIN COMPANY LIMITED



PUBLISHED BY

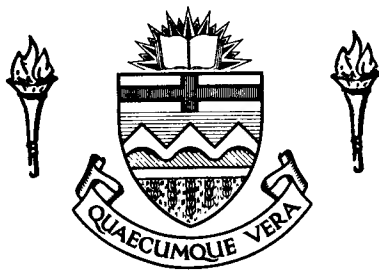
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PREFACE

This booklet consists of a series of articles which were published in the Searle Grain Company's "Market Features Letter" during 1953 and 1954.

The articles were written in response to a considerable number of inquiries that came from school children, college and university students, school teachers, farmers and business men, asking for details of various phases of the agriculture of the West since the very beginnings. The answering of these many letters became quite a task, so it was decided to write a series of articles that would answer most of the inquiries. Soon requests came in for sets of these articles and later to have them in bound form, hence this booklet. It is hoped, therefore, that this booklet, comprising a short history of prairie agriculture, will supply information to those who are interested in the study of our Western country from the days when agriculture first started.

A great deal of research has been undertaken to collect and compile the material needed. Many books and works of reference and documents, both official and private, have been consulted. The statements quoted and the statistics and figures given are not documented in this booklet, for it was felt that this would not be necessary for the purpose of the general reader. The documentation, however, has been done, and those who may be interested can obtain the references on any particular information given by applying to the Searle Grain Co. Ltd.

It would make too long a list to mention all those to whom the author is indebted for valuable information; to these his grateful thanks are tendered. Special thanks, however, are made to the archivists and librarians of the Legislative Libraries of Winnipeg, Regina and Edmonton, to the Librarian of the Agricultural Library of the Dominion Department of Agriculture at Ottawa, who made many studies for the author, and to the General Mills Research Library at Minneapolis, which supplied much information on the early days of milling and baking, grain production and marketing in the northwestern part of the United States. Grateful thanks are tendered also to the various Departments of the Dominion Bureau of Statistics, Ottawa, and to the Statistical Departments of the Board of Grain Commissioners, Winnipeg, for making their publications, special studies and historical documents available to the author. The author acknowledges with thanks the valuable information given on the history and development of the Great Lakes by that well-known historian, Mr. J. P. Bertrand of Port Arthur.

Most special thanks are tendered to a number of old-timers in the Prairie Provinces who have gone to considerable trouble in supplying written information dealing with their own early experiences in the West; which brings to mind the thought that there is still, in the memories of these old-timers, a wealth of original information that has not yet been published. It is thought that it would be a valuable task for someone to make a special effort to seek out these old-timers, to interview them and to write down their recollections, for these people today are getting along in life, and when they go the valuable information they have now stored in their memories will, of course, no longer be available.

Finally the author wishes to thank Mr. S. A. Searle, President of the Searle Grain Company, for his encouragement and valuable advice on the writing of this booklet, and for his patient and critical reading of the final manuscript.

It must be clearly understood that none of the people who have kindly supplied information for this work are themselves responsible for any thoughts and ideas expressed in this booklet.

H. G. L. STRANGE
Searle Grain Company, Ltd.

Winnipeg, May - 1954.

A Short History of Prairie Agriculture

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Chapter One

The Beginnings

"Though thy beginning was small, yet thy latter end should greatly increase."—Job 8:7.

THE AGRICULTURE of the prairie provinces seems to have been a natural development of the great fur industry of the West that started with the arrival of the ship, the "Nonsuch", on Hudson Strait on August 4, 1668.

Bitter struggles soon ensued between the Hudson's Bay Company, the Pedlars or Free Traders and the North West Company, to trade goods for the vast quantity of furs trapped by the several tribes of Indians extending from the Hudson Bay across the prairies to the Rockies. One after the other these rival and fighting companies and individuals built forts along the great rivers — the North and South Saskatchewan and the Red — to trade with the Indians. Partly to feed themselves the traders at these forts cultivated a little land around each fort and grew wheat, oats and barley. This, no doubt, was the very beginning of prairie agriculture. The varieties of these grains that these early white men — British, French and American — grew are unfortunately not known. They were probably varieties brought over from Britain and France and from the Eastern part of America.

The first white man, as far as is known, ever to see what we now term the open prairies was Henry Kelsey, an English lad in the employ of the Hudson's Bay Company, who left the Hudson Bay with some Indian fur traders and explored the prairies as far south as the present Touchwood Hills, in what is now central-eastern Saskatchewan. Here, Kelsey states, he saw the Assiniboine Indians, the open prairies and the buffalo. This was in the summer of the year 1691.

For untold centuries, before the advent of the white man, intelligent hunters — the North American Indians — had occupied the territory we now call Manitoba, Saskatchewan and Alberta. The Assiniboines, the Black Feet, the Bloods and the Sarsis occupied the open plains; the Crees were in the northerly wooded areas; and the Chipewyans still further north. Each tribe kept within its own traditional hunting grounds.

The Plains' Indians hunted the buffalo which, with the abundant berries, provided their main necessities of life — meat and fat for food, fur and hides for clothing, and for making their teepees and tents. The buffalo, perhaps millions of them, fed on the luxuriant grass of the prairies, the growth of which varied with the amount of rainfall. As grass became less plentiful in one part the buffalo moved to areas where it was more plentiful, and the

Indians followed the buffalo. In the wooded areas the Indians depended on moose, deer, bear, beaver, birds and fish. This primitive Indian economy was self-sufficing and permanent. It was all part of a perfect balance between nature, food and man.

The Hudson's Bay Company, starting in 1668, interfered but little with the life of the Indians. The Company merely traded with the natives, offering the white man's goods in exchange for furs. The Company kept its word and so received the trust of the friendly Indians. It forbade the trading of liquor with the Indians. Some two hundred years later, however, individual and less scrupulous so-called "whiskey traders" came into the area from the United States. They offered whiskey to the Indians in exchange for furs, and this, as would be expected, began to demoralize a primitive race which was not accustomed to such potent "fire-water." White men's diseases also took a heavy toll of the Indians. In 1870 the tribes were decimated by a virulent scourge of small pox.

In the late "sixties" white men from Fort Garry and from other parts, armed with rifles, organized hunts to kill the buffalo for their hides, for pemmican meat and often for the mere sport of killing. The Indians, too, had by now obtained rifles and were encouraged to engage in the slaughter. The Crees also introduced a method of herding buffalo into corrals, where the animals could easily be despatched by the hundreds. This indiscriminate slaughter practically exterminated the buffalo by 1882. Actually this extermination was no mystery, as some suppose. It was, in fact predicted accurately by Captain Butler in 1870 in his famous work on the West entitled "The Great Lone Land."

The combination of the white man's rifle, his whiskey, the small pox, and the extermination of the buffalo impoverished and demoralized the Indians and brought them close to destitution.

Soon after Confederation, 1867, the Canadian Government began to look with envious eyes on this vast western land as an area for settlement for immigrants. It discovered, however, that the title to all the territory, called Rupert's Land, was held by the Hudson's Bay Company under the Charter granted to them in 1670 by Charles II. The Canadian Government disputed the title of the Hudson's Bay Company to these lands. The British Government, however, upheld the claims of the Hudson's Bay Company. Nevertheless the Company, in order not to impede future settlement, agreed to surrender its Charter to the British Crown — Queen Victoria—except for its trading rights. The British Government agreed to pay compensation for the valuable surrender of rights by giving the Company £300,000 in cash and one-twentieth of all the land surrendered; that is, one section in every township in the so-called fertile belt. The surrender was made to the Queen on November 19th, 1869. From this date the vast area of Rupert's

Land became, for a time, an Imperial Crown Domain. The British Government finally transferred the ownership of Rupert's Land to Canada on July 15th, 1870.

The Indian tribes strongly objected to the proposed loss of their land to settlers, claiming that by right of long occupation and use they alone were the true owners of the land. But the Indians were unable to back up their claims by force of arms, so the different tribes were finally persuaded to make treaties by which they gave up their traditional wide, rich and lush hunting grounds and agreed to be confined to designated areas, called Indian Reserves, on condition that the Government paid to each Indian a small cash payment each year, and supplied each Reserve with beef and flour and certain equipment and stock and instructors in an effort to help the Indians to become farmers. Between 1871 and 1877 seven such treaties were made covering most of the tribes.

So passed that natural balance and stable economy — the grass the buffalo and the Indian,—the grass to be ploughed under, the buffalo to be exterminated and the once free, proud and Noble Redman to be confined within narrow reserves. Thus was opened the way for the eager, land-hungry immigrants from over-populated countries to pit their courage, initiative and endurance against the changed and now unstable prairies and to contend with the forewarning in Genesis: "Thorns also and thistles shall it bring forth to thee; . . . in the sweat of thy face shalt thou eat bread." Thus, too, we have another example, observed in all ages, of that inexorable law of the land — that the hunter makes way for the herder and the herder makes way for the farm, all apparently following the workings of that ancient adage which says:

"The good old rule; the ancient plan.

He takes who has the power; he holds who can."

Chapter Two

Settlement Before the Railways Came

THE FIRST SETTLEMENT of Western Canada started with the Selkirk Settlers, in 1812. The original settlement arose from the terms of the Charter granted by King Charles II to the Hudson's Bay Company. This clause was "to create a colony known as one of our plantations or colonies in American Rupert's Land." The King no doubt had in mind the successful British settlement in Virginia, dating from 1607, and in what is now the U.S.A. Obviously, then, one of the responsibilities of the Hudson's Bay Company, besides trading in furs, was to settle the country.

For a long time the fur trade alone had occupied the energies of the Hudson's Bay Company, but early in the 19th century some pressure, it seems, was exerted on the Company, both from

Britain and from Canada, to test out the great country of Rupert's Land for agricultural settlement. The Hudson's Bay Company was probably quite pleased when one of its shareholders, Lord Selkirk — a man experienced in promoting settlements — agreed to found a colony in the Red River Valley. The Company granted Lord Selkirk 116,000 square miles of land. One clause of the grant was that he was to establish one thousand settlers in ten years.

Lord Selkirk had already established a successful colony in Prince Edward Island in 1803 and a colony at Baldoon in Upper Canada which, however, was unsuccessful.

Lord Selkirk thought that his Red River Settlement would reduce the distress of the poor in the United Kingdom through emigration. He also felt that the colony could take care of retired servants of the Hudson's Bay Company and their children, and French Canadians and their children, as well as new immigrants.

The first group of Scottish and Irish immigrants came in through the Hudson Bay and arrived at the forks of the Assiniboine and Red Rivers on August 30, 1812. Lord Selkirk set up Point Douglas as his headquarters (the site of Point Douglas adjoins the present site of the C.P.R. depot in Winnipeg). He laid out narrow lots of 100 acres each for the settlers, with four acres fronting the river. The idea, at first, was to grow wheat and hemp and wool for export. The settlers suffered unexpected disasters year after year — early frosts, plagues of grasshoppers, Passenger pigeons and mice, etc., all of which destroyed their crops. There were also attacks by Indians and by the servants of the Nor' West Company (which was a rival fur company to the Hudson's Bay Company). At times the settlers were near starvation and twice had to retreat up Lake Winnipeg to Jack River. Once the French-speaking settlers retired up the Red River as far as Pembina, on the U.S. border.

In 1814 the colony harvested 23 kegs of 10 gallons each of wheat. This is the first recorded production of wheat other than in garden plots in the West.

In 1821 a few Swiss immigrants, with one or two German families, joined the colony, which later split up into two camps, the French Canadians when they came back from Pembina occupying the east side of the Red River in what is now St. Boniface, and the English-speaking settlers remaining on the west side in what is now Winnipeg. A few new settlers began to come in year by year and by 1825 the first colony was described as "a thriving agricultural community."

A disaster hit the colony in 1826 (similar to the great flood of 1950) when the Red River flooded. Quite a number of settlers then decided they had suffered enough, left the colony and emigrated south to the United States.

(The full story of the Selkirk settlers is extremely fascinating. Those who wish to learn more about it should read such books as "A History of the Hudson's Bay Company", by Morton; "A History of Prairie Settlement" by Morton and Martin, and "The Selkirk Papers," which are to be found in the public archives of Canada. It is a story of incredible hardships and difficulties, disenchantment and tragedy that fell on a group of men, women and children in a strange, unfriendly land, far from home, and how, by their courage, sterling qualities, pertinacity and determination, most of them survived and eventually achieved moderate success.)

The beginning of the growing of crops of wheat, oats and barley on a fairly large scale was started by the Selkirk settlers. (They also grew peas, beans, rye, hemp and Indian corn.) Year after year, as has already been noted, their crops were destroyed and in some years even the seed grain was destroyed, so that in the spring of 1820 a new supply of seed had to be secured from Wisconsin, U.S.A. It took the members of the Selkirk Settlement, travelling on snowshoes, three months to reach Wisconsin. They brought back with them 250 bushels of seed in flat boats, coming by way of the Mississippi and Minnesota Rivers, Big Stone Lake and the Red River, and finally landing up at the Selkirk Colony in June, 1820. The seed was sown at once, made a good crop and was harvested. From that date on crop production on the prairies has gone steadily forward, despite the severe hardships which had to be endured by the pioneers during much of the time.

The names of the varieties grown by the Selkirk Settlers are not known. They were probably varieties brought by them from Scotland. About 1868, it is thought, a new wheat appeared in Manitoba. It was called Red Fife. This was a selection from a handful of grain sent to David Fife of Otonabee, in Ontario, from a friend in Scotland in 1842, who took it from a shipload of wheat arriving from Danzig on the Baltic Sea. It is believed that Red Fife spread from Ontario down to the United States and then came up from the United States to Manitoba. At all events, this wheat was shown to have high milling and baking qualities and was the beginning of the high reputation afterwards attained for Canadian wheat for "strength" on the markets of the world.

(It is interesting to note that in 1876 a shipment of 857 1/6 bushels of Red Fife was made from Winnipeg to the Steele Briggs Company of Toronto, to be used as seed. This is the first recorded shipment of wheat from the province of Manitoba. The seed travelled up the Red River by steamboat, via St. Paul to Ontario. The first shipment of wheat from Manitoba to Great Britain was made on October 17th, 1877, which again went out by Red River Steamer to St. Paul and thence by rail to the seaboard. The first large shipment direct to Britain by an all-Canadian route was made by the Canadian Pacific Railway from Manitoba in 1884, of 1,000 bushels of Manitoba No. 1 Hard — it was this shipment that no doubt established the high reputation of Manitoba wheat throughout the world.

By 1830 the Red River Settlement seemed to have come to a standstill so far as growth was concerned. It was only growing by its own natural increase.

The sole outlet the settlement had to the outside world was by York boats on lakes and rivers through the Hudson's Bay. The settlement was producing food for the company's employees at its many posts and so was considered to have justified its existence. But this was not felt to be enough. It was realized that cheaper and quicker transportation to other parts of the world was necessary to allow of greater development.

A census of the settlement was taken in 1849. It was revealed that there were 5,291 people, mainly half-breeds; 745 houses; 12 schools; 7 churches; 6,392 acres under cultivation; 2,085 horses; 2,097 oxen; 155 bulls; 3,762 cattle; 1,565 pigs; 3,097 sheep; and an assortment of farm implements, carts, boats and canoes. By 1856 the population had only increased to 6,691 people, of whom only 1,565 were whites, and there were 8,806 acres under cultivation.

An event occurred, however, that brought about an enlargement of the settlement. Before 1859 there had been some small connection between Fort Garry and the United States via Pembina and by an annual brigade of Red River carts, which started at St. Paul, Minnesota. In 1859, steamship communication was established. The S.S. "Anson Northrup" carried freight and passengers down the Red River from Pembina to Fort Garry. This brought a number of Americans, Canadians and others to the settlement, among whom were two Englishmen from Toronto who, on December 28th, 1859, established the first newspaper, the "Nor'Wester". The official census of 1871 shows that there were no less than 12,228 people now in Manitoba, mainly in the Red River settlement.

Chapter Three

The Coming of the Homesteaders

ON JULY 15th, 1870, (3 years after Confederation) Canada was given possession by Great Britain of Rupert's Land, the area now known as Manitoba, Saskatchewan and Alberta, and the Northwest Territories. This vast, almost unknown land, was considered to be the last remaining large area in the whole world with vacant agricultural land suitable for settlement.

People from over-populated European countries, and from Eastern Canada, were eager to come to this new "land of opportunity", to secure free land and a better chance of living than they had had in their own countries, and so to offset for a time the workings of Malthus's grim law of "population pressing against food supply."

An Order-in-Council of March 1st, 1871, made formal provision for homestead entries on quarter sections of 160 acres, with a fee of \$10.00 and residence requirements for five years. Preparations were made to survey the land. The International Boundary between the United States and Canada — along latitude 49 — was agreed upon in 1873. From this base survey parties quickly spread out and, following the American plan, divided the country into townships of six miles square, each township being sub-divided into thirty-six sections of one mile square, and each section into four quarter sections of 160 acres.

The granting later of 25 million acres to the Canadian Pacific Railway, in 1881, to assist with the building of the railway, and giving the Company every alternate or odd-numbered section in each township, and extending back twenty-four miles on each side of the railway, upset the Homestead Act of 1871, so a new Act was made in January 1882, which permitted all comers over twenty-one years of age to homestead on even-numbered sections, except sections 8 and 26 in the fertile belt which were owned by the Hudson's Bay Company. (Sections 29 and 11 were reserved for school lands.)

The 1882 Act specified that a settler could obtain a grant of 160 acres of land free on even-numbered sections on the condition of a payment of \$10.00 (ten dollars) and residence of three years. (The resident requirements were later eliminated by allowing the settler to "prove" by cultivation, building or stock.)

It was soon found that in some areas (rough land and low rainfall districts) 160 acres were insufficient to support a family and, as was stated at the time, "Distress all too frequently followed fast on the trail of those who undertook to make homes out of wild land and enthusiasm." A regulation was therefore introduced by which each homesteader could pre-empt an adjoining quarter for \$3.00 an acre, to be paid in five equal annual instalments. Those who could not find an adjoining quarter could take up a pre-emption elsewhere in the form of a "purchased homestead." It is to be remembered, too, that any settler could purchase additional land from the Hudson's Bay Company or later from the Canadian Pacific Railway Company at quite a cheap price and on easy terms, so it will be seen that there was no lack of opportunity for immigrants to acquire land.

(These conditions lasted until 1918, when they were repealed to make way for the Soldier's Settlement Act.)

The Government quite early gave special inducements to colonies. Separate colonies of Swiss, Germans, Scottish and repatriated French Canadian immigrants were not successful. A colony of Icelanders, however, settling along the west shore of Lake Winnipeg, at Gimli, finally succeeded after enduring the most intense hardships. Equally successful were colonies of Mennonites.

The Mennonite colonies in 1877 were found to be "in a very flourishing condition, giving evidence of very great and persistent energy." (In later years a number of other colony settlements were set up. Some succeeded, some did not. It is interesting to note in this connection that of the colonies in which the members lived a community life few lasted for long except the Hutterites and the Doukhobors, the members of the other colonies evidently preferring to own land and property individually and for each to enjoy the fruits of his own individual initiative and enterprise and labour.)

The Government also made provision to sell land cheaply to individual promoters of immigration. Some sales were effective but some promoters were merely land speculators, who purchased land — the Metis script and homestead and pre-emption land — from settlers and resold it, causing various artificial "land booms." A complaint was made at the time that "the buying of land and script for a song and selling it at exaggerated prices drew men from farming and other occupations."

As the herds of the buffalo began to decrease in the middle seventies, American and British ranchers from Montana drove cattle north to graze on the lush grass of the prairies. These ranchers "squatted" on land with water and ranged cattle, and some later herded sheep, all of which caused trouble over wide areas. Some homesteaded around water holes.

The Government soon officially granted ranchers large areas for grazing leases, to be terminated as homesteaders needed the land. The homesteaders gradually advanced towards the grazing leases. Ranchers, naturally, resisted the encroachment of the homesteader, with his barbed wire fences on their grazing lands, which the ranchers considered unsuitable for farming. Many a bitter dispute ensued. Finally arrangements were made that set up exclusive grazing zones in southern Saskatchewan and Alberta where homesteading was not permitted. By this time, however, thousands of homesteaders were already trying to farm and build homes in some areas quite unsuitable for crop production. The Prairie Farm Rehabilitation Act, set up in 1935 — after thirty years or more of inexcusable delay — has, in more recent years done excellent work in assisting farmers to move away from land fit only for grazing to land elsewhere more suitable for farming.)

Most of the newcomers were young men, single, and full of energy, initiative and enthusiasm, and with great hopes for the future.

From some scattered writings of the settlers of that time, and from some communication with those few still living who were settlers in the early days, it seems that there were several primary causes which induced people to leave their own countries, the world over, and rush to take up land on the Western Canadian

prairies. The love of adventure, such as has gripped the imagination of young people throughout the ages, was one important reason, particularly with those who came from Great Britain. But perhaps the most important reason was the urge to own land; to have a better assurance of a food supply and a chance to earn a better living than these immigrants thought they could obtain in their own countries. Besides all this, there was also involved, no doubt, that deep, unconscious urge that is sometimes called "the human drift", so notable in history, by which at times people in great multitudes drift from one area to another in search, first of food, and second of better prospects, peaceably if they can but with sword in hand to take by force the land of others if necessary.

Chapter Four

Early Transportation

THE CANADIAN Government did not look kindly on the fact that the people of Manitoba in those early days had to journey down the Red River, through the United States, to have an outlet to Britain and Europe, that is, if they wished to avoid the long journey by York boats through the Hudson Bay. So in 1871 the Government organized a transport service for freight and passengers, by cart and steamship, from Thunder Bay on Lake Superior, via Rainy River and Lake of the Woods to Fort Garry. The cost to the Government for each passenger was \$25.00, but the Government charged intending immigrants only \$10.00. In its best year, 1876, only 2,172 passengers, both coming and going used this route.

On November 7, 1878, the Government built a railway from Fort Garry to Pembina, so connecting Winnipeg and the Red River settlement by rail via the United States with Eastern Canada and the outside world.

It is interesting to note that the first train from Winnipeg to Emerson was pulled by a locomotive named "The Countess of Dufferin", made by the Baldwin Locomotive Works in the United States, and which locomotive is now preserved in a small park facing the Canadian Pacific Railway station at Winnipeg on the very site of Fort Douglas where the first settlement of Lord Selkirk's colonists began.

People now began to come to Manitoba in greater numbers, and to spread out quite some distance away from the Red River settlement. A colony of Mennonites, for instance, was granted land in 1873, south and west of the settlement. These Mennonites were the first to demonstrate that farming could be conducted successfully on the high prairie plains. Icelanders came in 1874 and repatriated French Canadians in 1875. By 1881 the population of Manitoba had increased to 65,954 people, who had 279,249 acres

under cultivation. The population of the city of Winnipeg had risen from 241 people in 1871 to 7,985 in 1881.

Soon after Britain, on July 15th, 1870, had transferred to Canada the vast Western Prairies, the Canadian Government had a great vision that a Transcontinental Railway should be built. Sir Charles Tupper, a member of the Cabinet in 1879, expressed this vision as follows:

“That the Pacific Railway would form an Imperial Highway across the Continent of America entirely on British soil, and would form a new and important route from England to Australia, to India and to all the dependencies of Great Britain in the Pacific, as also to China and Japan . . . That it is obvious that it would be of general advantage to find an outlet for the redundant population of the Mother Country within the Empire, and thus build up flourishing Colonies on British soil, instead of directing a stream of emigration from England to foreign countries.”

The decision to extend a railway from Ontario to the West, and through the Rockies to the Pacific, had not been arrived at without a great deal of acrimonious dispute. Indeed, the matter had become a question of intense political dissension at Ottawa.

The Canadian Government agreed with British Columbia in 1871 to build a railway to unite the Atlantic and the Pacific, but the building of the road, and the opening up of the prairies, was opposed by strong political factions. These opponents pointed to the exploration of David Thompson, of the Hudson's Bay Company, who crossed the prairies in 1784, to the Palliser Expedition on behalf of the British Government of 1857-60, and to the explorations of Henry Yule Hind on behalf of the Canadian Government in 1857-58. They claimed that these explorers had christened a large area from Winnipeg to the Rockies as “The Canadian Desert” and stated that it was a northerly extension of the “Great American Desert” to the south.

Palliser had made a map of the West and had drawn on it a line that started just south of Pincher Creek, in Alberta, and angled north and east in a semi-circle with the peak touching near Saskatoon, and then turning south-east in a long, irregular curve that rested half-way across Manitoba and at the international border line. (This area has since been called the Palliser-Triangle). The area south of this curved line both Palliser and Hind considered to be worthless for agricultural purposes, but that north of this line there was a wide fertile belt, where these explorers believed farming could be profitably conducted.

Those who favoured the opening of the West, and the building of a railroad from Winnipeg west to the Pacific coast, pointed

to the crops that had been grown at the various Hudson's Bay and French forts for centuries and for many years at various religious missions that had been established, and also to the crops grown by the Selkirk Settlers in Manitoba for over fifty years. They also noted that in 1830 the Hudson's Bay Company had spent a large sum of money setting up an Experimental Farm on the banks of the Assiniboine, near Fort Garry. It was known to some, too, that La Verendrye and his son had long before made a journey from the French "Fort la Reine", close to where Portage la Prairie now stands, south into the Dakotas, and had found in 1738 several villages of a tribe of Indians called the Mandans, who were not hunters exclusively as were all the Indians of the Northwest and in Canada, but actually were farmers and had for long successfully grown crops of corn, maize, pumpkins, beans and the like. These Mandan villages were situated in the very centre of what was commonly called "The Great American Desert." Those favouring the settlement of the West contended, therefore, that if crops had already been grown in some spots, that crops could be grown everywhere in the West.

The Government finally decided that a Transcontinental Railroad should be put through. Some heated discussion then ensued as to whether the road should run from Winnipeg, angling northwest through Palliser's so-called "fertile belt" to Edmonton, thence to British Columbia, or whether it should run west from Winnipeg through the southern area, straight across what Palliser and Hind had described as "The Canadian Desert."

The Government, in 1879, then called on Mr. Sandford Fleming, a famous railway engineer, to assemble all the data then known about the West and to have further surveys made. A number of exploring parties were sent out, each to travel along a different route. Mr. John Macoun, a distinguished Canadian botanist, who had already crossed the prairies in 1872 and 1875, was given charge of an expedition to proceed south of the 51st parallel from Winnipeg straight west through what Palliser described as "The Canadian Desert."

Macoun offered his opinion that Palliser, Hind and Thompson were quite wrong; that the prairies were not a desert. He estimated the area contained 45 million acres of land suitable for cultivation and that while the annual rainfall was low, yet because abundant rains fell during the three summer months good crops would be assured. Because of this later information, and a political desire to have the railway as near to the international border as possible in order to maintain the sovereignty of Canada over the area, the Government approved the southern route. (Later experience has shown that the conclusions of Thompson, Palliser, Hind and Macoun were partly right and partly wrong.)

The Government had previously suffered costly losses endeavouring to build railways. It was decided, therefore, to have the

new railway built by private enterprise. A Syndicate offered to raise the necessary capital in London. Parliament, on February 1st, 1881, approved a Bill granting rights and terms to the Syndicate. The Syndicate then changed its name and became the Canadian Pacific Railway Company. The C.P.R. Engineer-in-Chief, Mr. Sandford Fleming, made many surveys from Winnipeg to the Pacific and at first planned the best route to the coast via the Yellow-head Pass, somewhat west of Jasper, thus passing through what Palliser and Hind, years before, had christened "The Fertile Belt of the Prairies." Political considerations, however, demanded a more southerly route, to run from Winnipeg to Portage la Prairie, Brandon and Regina to Calgary, thence through the Kicking Horse Pass to Vancouver, which route would not be too far north of the International Border. This was probably to prevent American railways, which were then eagerly pushing north in the U.S.A., from serving the southern part of the prairies.

(Incidentally, it may be noted that the two later Transcontinental lines, i.e., the Canadian Northern and the Grand Trunk Pacific Railways, each used the "Fleming" Canadian Pacific Railway surveys for a good part of their respective routes).

The Railway Company made an amazing record by constructing a railroad in half the expected time from Winnipeg to the Pacific. The railroad actually reached Winnipeg on July 26th, 1881; Calgary in August 1883; and the Atlantic and the Pacific were joined together by the Canadian Pacific Railway in 1885.

The Canadian Pacific Railway soon built numerous branch lines and so was the means of enabling many thousands of immigrants to settle on the land adjacent to the main line and its branches. At the start of construction, however, there was no settlement, and as Edgar wrote in his excellent book, "Canadian Railway Development," published in 1933: "In order to find business, the Company emphasized the scenic attractions rendered accessible; carried Buffalo bones while waiting for wheat; pushed the Ontario and Quebec extensions; developed traffic by seeking settlers from Britain and aiding industries at strategic points; organized a loyal and efficient staff; and by unremitting effort met the operating expenses, paid a dividend, and accumulated a surplus every year from the beginning."

Chapter Five

"Transcontinental Fever."

A FEW years after the C.P.R. had been in successful operation, a veritable "Transcontinental fever" seems to have gripped the Government and the entire population of Canada. The quickening spirit of the times demanded another Transcontinental line between the Atlantic and the Pacific, to cross the prairies north of the C.P.R. main line, in order to give better transportation to the settlers who were spreading out in the more northerly prairie areas.

This "Transcontinental fever" finally resulted in not one but actually in two additional Transcontinental lines eventually being built. (There actually was need for only one.) Those who conceived separately these two new railways, Mackenzie and Mann of the Canadian Northern and Charles Melville Hayes of the Grand Trunk Pacific, were greatly helped by the experience of the C.P.R. and by the already considerable amount of settlement in the prairie areas through which their new lines would pass.

First on the scene were William Mackenzie and Donald Mann, two Ontario boys who had gone from school-teaching and lumbering into railway construction, "William Mackenzie, the master planner and financial wizard, and Donald Mann as forceful in rounding up a lobby full of politicians as in driving a section gang."

Sometime prior to 1895, Mackenzie and Mann had conceived the audacious scheme of building, by their own private initiative, independent of any agreements or partnerships or undertaking with the Government, a Transcontinental railway from the Atlantic to the Pacific. They deliberately planned to obtain leases on small existing railroads, and to build other local lines in different places, and then later silently and obscurely to join them together and to announce suddenly a completed Transcontinental Railway.

Hardly anyone in Canada knew what Mackenzie and Mann were about in those early days or paid much attention to them. Yet, quietly and persistently, their work went forward strictly in accordance with their original almost secret plan, which was described by O. D. Skelton in his book, "Life and Letters of Sir Wilfred Laurier", as follows:

"To have the public build a Transcontinental railway with all the usual steamship, express, hotel and land-company attachments, and yet to vest ownership wholly in two promoters who put into it little but their ambition . . . The planning was constructive, the strategy in the selection of routes in the early years admirable, the service rendered the prairie country of immense value. The financing was radically unsound in its lack of share capital to tide over a waiting time. The reliance upon the public treasury for guarantees, subsidies, loans, brought into Canadian politics the most corrupting single factor in Confederation times."

The Canadian Northern Railway evolved from a series of detached short lines, later joined together, to extend from the Atlantic to the Pacific. The idea of the Canadian Northern was born in Manitoba, in 1896, by the acquiring of an existing road of 100 miles long. By 1914 it had grown to a Transcontinental system of over 10,000 miles (including branch lines, serving seven of Canada's nine provinces.) "The impossible had been achieved."

The Canadian Northern was at Port Arthur in 1900 and arrived in Winnipeg via Fort Frances in 1901. From Winnipeg, by purchasing some already existing lines, the system extended in 1901 to Portage la Prairie and Gladstone, and from there to Ross Junction (now Canora), thence to North Battleford, reaching Edmonton on November 4th, 1905. The Railway from Winnipeg to Edmonton followed the C.P.R. "Fleming Survey" that the Canadian Pacific Railway had originally intended to use itself in 1880.

After reaching Edmonton, the Canadian Northern devoted its efforts to building branch lines in the northern prairies. In 1906 a line stretching from Regina to Saskatoon to Prince Albert was acquired from the English and Dutch Capitalists who owned it, and which line had been leased and operated for some years by the C.P.R. Then in 1907 the Canadian Northern built the "Goose Lake Line," running from Saskatoon to Calgary via Hanna and Munson. Later a line was built from Edmonton to Calgary via Camrose, to compete with the C.P.R. from Edmonton to Calgary further west. Many other branches were constructed in the West, until by the end of 1908 the mileage operated by the Canadian Northern, including lines leased to Eastern Canada, came to 5,400 miles.

In 1911 construction was started west from Edmonton with Vancouver as the goal, the line to go through the Rockies via the Yellowhead Pass. Magnolia Bridge was reached in 1912; Solomon in 1913. Then the line proceeded to Morley, turning south towards Kamloops. Ashcroft was reached in 1915. The last spike of the Canadian Northern Transcontinental railway was driven at Basque, B.C., in 1915. But because of the Great War that was raging in Europe, little public notice was taken of this most important event in Canadian transportation history.

Owing to the serious economic and financial disturbances caused by the first Great War, plus the high cost of production, the Canadian Northern, in 1916, became bankrupt, with no equity attached to the common shares. In 1918 the Canadian Northern System was taken over by the Dominion Government.

By 1902 the "Transcontinental Fever" resulted in the planning of another new Railway—the Grand Trunk Pacific. (Hardly anyone realized that the second Transcontinental line, the Canadian Northern, was already being built by Mackenzie and Mann.) A great American railroad man, Charles Melville Hayes, who had previously worked wonders in rehabilitating the Grand Trunk Railway System in Eastern Canada, was given charge.

The Government signed a contract on July 29th, 1903, to build the National Transcontinental Railway from Moncton, N.B., to Winnipeg, and to lease it to the Grand Trunk Pacific, then for the Grand Trunk Pacific itself to build — to a great extent with British capital—from Winnipeg to Edmonton, then through the Yellowhead

Pass to Prince Rupert as a terminus. So, it was thought, making the shortest line from Great Britain to China, Japan and the Orient. It was believed that Prince Rupert would develop into the greatest port on the Pacific. v

The Government brought together Mackenzie and Mann, of the Canadian Northern, and Charles Hayes of the Grand Trunk Pacific, in an attempt to find a basis for co-operation so that only one additional Transcontinental line would cross the continent. Many conferences were held but proved abortive. So we find that by 1903 both the Canadian Northern and the Grand Trunk Pacific were pushing forward to the Pacific from Eastern Canada.

Construction on the Grand Trunk Pacific started westward from Portage la Prairie, Manitoba, in 1906, and eastward from Portage la Prairie to Winnipeg in 1907, reaching Winnipeg in July 1908. The route across the prairies chosen was somewhat south of the line adopted by the Canadian Northern, and followed another of the C.P.R. "Fleming" surveys of 1880. The Grand Trunk Pacific line travelled from Winnipeg to Portage la Prairie, to Melville, to Watrous, to Saskatoon, and to Edmonton, which it reached in 1910. Then it went via Ansell, Gekie, through the Yellowhead Pass to Tete Jaune and Usk. Prince Rupert was reached in 1913 and the first through train from Winnipeg arrived at Prince Rupert on April 9th, 1914.

The Grand Trunk Pacific's main interest was in traffic between Britain and Asia, via Canada. Yet it built around 1,000 miles of branch lines on the prairies. Unfortunately, the Grand Trunk Pacific never did handle sufficient business to pay, and Prince Rupert never did develop as a port as hoped for. This, coupled with the destructive influences of the Great War and credit stringency, caused the G.T.P. also to become bankrupt. In 1920, then, Canada became saddled with two Transcontinental lines, neither of which could pay its way, and which became the Canadian National Railways.

Chapter Six

The Settlers Spread Out

BY 1883, as has been shown, "The Great Lone Land" was open and the stage all set to receive immigrants. In great multitudes the settlers arrived—singly, in families, in small groups and in colonies. This tide of immigration started the greatest rush for agricultural land ever seen. It was not even surpassed by the rush that had taken place, some years earlier, in the western part of the United States. Homesteads were granted in order of application. "First come, first served" was the order of the day.

The first homesteads were taken up, as would be supposed, alongside and as near as possible to the main Canadian Pacific Rail-

way line. As lands adjoining the railway were filled up, so did settlers venture further afield, at first by ox and horse-drawn wagons, and later by the new railroads, to find vacant land.

As soon as settlers obtained a patent, they could always obtain a cash loan with which to purchase implements and livestock. Poor settlers erected sod houses and some even for a time lived in dug-outs. They made their own soap, their own axe handles and sleigh runners out of oak trees growing nearby. Some settlers homesteaded quite close to cities; lucky ones were able to sell their land after it was proved up for a substantial sum as city lots.

Most homesteads could always be sold if the settlers wished at a good price as soon as the patent, after three years, was obtained. It was facetiously said at the time that homesteading was a gamble in which the Dominion Government bet 160 acres with the settler against \$10.00 that he could not stay on the homestead for six months for each of the three years without starving to death. If the settler did not succeed he lost his \$10.00. If he did succeed, he received his patent for the land. It is amazing to note how many succeeded and won through without asking for or receiving any assistance from any Government.

During those early days settlers without money helped to break the land and erect the buildings of those who were better off and thus earned money with which to survive. Many homesteaders earned money by joining Dominion survey parties, which were still engaged in surveying the country, or railway construction camps and gangs in building branch lines and bridges; or by freighting supplies from points along the railways to Northwest Mounted Police depots at distant points, or by working for Dominion Government Departments, Land Offices and for retail stores in the new villages and towns. Some went to far-off mining camps, even as far as the Klondike, to work in the mines, returning each year in time to put in their quota of work on their homesteads. They cut firewood and sold it to nearby villages and towns. They cut railroad ties and sold them to railroads. Some settlers bought old farm implements and repaired them for resale. Others bought oxen and horses, fed them up and sold them at a profit. The grown-up daughters of some settlers' families often found work as "hired help" with city families in Winnipeg, Regina and other growing cities. All this helped to provide cash for the homesteaders.

Retail merchants were called "the Good Samaritans" of the homesteaders, and invariably helped homesteading families with longtime credit until the homesteader could become established. There were hardly any instances of these debts failing to be repaid in those days. Food was not much of a problem, for there was an abundance of wild ducks, geese and prairie chickens, and untold thousands of rabbits, and in some districts numbers of muskrats

which were good for eating. Occasionally a settler could shoot a moose or a deer, for there were no shooting restrictions. Wild berries were to be found in abundance.

Barley was grown and roasted for coffee and a wild plant that grew on the prairies was used to make an acceptable tea. Flour and sugar, however, had to be purchased.

A supply of water was often a serious difficulty. Settlers could only dig down a few feet to find water. If none was found, and none was within hauling distance, the homestead had to be abandoned.

Settlers first of all usually put in a vegetable garden, with the invariable potato, and it was the practice to dig a root cellar in which to store potatoes over the winter.

Most of the settlers of those days were thrifty people, careful with their money. The burdens and hardships of the prairies were shared by all. The better-off settlers were always most generous in helping others whose families happened to be in need. The hardships were mingled with humour and mirth and with song and dance whenever possible.

It might be interesting to note the kind of people who were in the country at that time. John Macoun, in his book, "Manitoba and the Great Northwest", published in 1882, tells us of this. In 1881, he says, there were in Manitoba 11,503 English, 16,506 Scotch, 10,173 Irish, 9,949 French, 9,158 Germans and 1,898 of other nationalities and 6,767 Indians (the Mennonites were evidently counted as Germans for we are told in a separate estimate that in 1877 there were 7,000 Mennonites in Manitoba). These different nationalities were not all white people; quite a number of them were Metis (i.e., part white and part Indian) but their nationalities are given of the racial origin claimed by them. This made a total of 65,594 people in the Province of Manitoba. There were 279,249 acres under cultivation. Incidentally, the total provincial revenue of Manitoba in 1877 and 1878 was only \$526.00! The Dominion Government, therefore, had to bear the expenses of provincial administration.

Macoun informs us, too, that in 1881, in the Northwest Territories — that is to say, the land which we now call Saskatchewan and Alberta — there were only 1,374 English, 1,217 Scotch, 281 Irish, 2,896 French, 32 Germans and 49,472 Indians, or a total of only 5,800 whites and Metis together, including all the Hudson's Bay Traders and employees. There was no land under cultivation except a few acres around each Hudson's Bay fort. It can be said, then, that from 1871 to 1881 was the decade of Manitoba's settlement and that the decade from 1881 to 1891 was the period of settlement of the Northwest Territories, later to become Alberta and Saskatchewan.

Around that time also, and later, came what were termed "The New Canadians." We must define, however, what is meant by this term. Many Westerners today consider that the term, "New Canadians", applies to any immigrants, regardless of where they come from i.e., from the British Isles, any European country or the United States, etc. In the days of early settlement in the West, however, the term, "New Canadians" applied only to those immigrants who did not speak English or French as their native tongue, and it is this latter interpretation that we have in mind when we speak of "New Canadians."

These "New Canadians" included Austrians, French, Belgians, Czechoslovakians, Dutch, Danes, Esthonians, Finns, Germans, Galicians, Hebrews, Hungarians, Hutterites, Icelanders, Italians, Letts, Mennonites, Mormons, Nestorians, Norwegians, Poles, Russians, Roumanians, Latvians, Swiss, Swedes, Scandinavians and Ukrainians. Others were included in some of the larger groups, among them Bukowinians, Ruthenians, Bulgarians, Greeks, Lithuanians, Yugoslavians, Chinese, Japanese and Indians, making a grand total of thirty-seven different racial groups which, in 1951, were actually inhabiting and working in the prairie provinces. (The ubiquitous Chinese were brought in from Hong Kong about 1882, to help in building the railroad through the Rockies. They afterwards drifted to the prairies. From that day to this these quiet, patient, hard-working people have rendered inestimable service in the development of the West, by performing the humble but important tasks of laundering and of managing restaurants, in which capacities they have ever been welcome. The Chinese, too, introduced to the prairies from San Francisco that so-called Chinese, but in reality American, dish called Chop Suey!)

The first "New Canadians" consisted of a small number of Germans, who joined the Selkirk Settlers shortly after 1812, and a few Swiss in 1821. We then find in the census of 1881 that people of British origin in Manitoba, and what is now Alberta and Saskatchewan, made up 33.3% of the total population, which includes many Indians; that the French speaking amounted to 10.6%; and the "New Canadians" to 9.1% of the population. Then we find that by 1921 people of British stock made up 56.4% of the total population, the French 5.3%, and the "New Canadians" 28.3%. (The last census, of 1951, tells us that the British now make up 46.9% of the total population, including the Indians, of 2,547,770, the French 6.8% and the "New Canadians" 43.3%.) The details of the 1951 census for the Prairie Provinces, in percentage of total prairie population, including Indians, are as follows: British 46.9%; French 6.8%, German (which includes Mennonites) 11.7%; Ukrainians (which includes, for census purposes, Bukowinians, Galicians and Ruthenians) 10.4%; Dutch, 4.1%; Polish 3.7%; Norwegians 3%; Swedish, 2%; Russians, 1.8%; Jewish, 1%; Hungarian, .9%; Danish .8%; Czechoslovakians .8%; Icelandic .7%; and with people of several other racial origins, each with less than .7%.)

So it will be observed that those of British origin are tending to decline in percent of the prairie population, whereas the "New Canadians" are tending to increase. Some have thought that this gradually increasing population of people of many different racial origins may have an adverse effect on Western Canada's habits, thoughts and ideals. Let us, however, consider the foundations of the institutions, life and conduct of Western Canada which were laid, in the main, by people from Ontario and Quebec, who brought with them to the West the great traditions of Law, Order and Good Government, of individual freedom and liberty; and of the right of the individual to his personal possessions and property, and of justice to all regardless of class, race, religion or politics.

These ideals and practices form the very life of our prairie country, and there is not the slightest evidence to show that the "New Canadians" have in any way changed, or sought to change, these ideals.

One can say, then, that our "New Canadians", building on the solid and sound foundation laid by the British and French, have notably added to the development and progress of the West. From the humble workers who performed the manual work in building railroads, bridges and roads, to those who have attained no small eminence in the professions — Law, Medicine, Agriculture and Education and in businesses which they have undertaken. These "New Canadians", too, have added much to the practice of sound agriculture, for a large percentage of them were farmers of many generations before they came to this country. The "New Canadians" seeking homesteads looked for deep, black soil, wood, water and hay, for that is what they had been accustomed to.

The "New Canadians", from the very start, intended to stay on the land and make a home for themselves and for their descendants, and it is no reflection on any others to mention that it was the Mennonites who first demonstrated the possibility of growing grain successfully on the flat plains away from the Red River Valley, to which settlement hitherto had been confined. (This was in 1873).

Many of the "New Canadians" have also added much to the culture of this country, with their love of music, dancing, the writing of prose and poetry, and their liking for gay colours. They have in addition, been hard working, thrifty and law abiding.

A most notable feature of the thirty-seven races that now inhabit Western Canada is their ability to get along together with pervading friendliness and good will. It has often been remarked that they set a sterling example of self-help, and of a willingness to help others, that is a lesson to the people of Europe and other areas which today are so torn by political and racial prejudices. If thirty-seven races can work and play together happily in Western Canada, then why cannot exactly the same races work and play together in amity and friendship in other parts of the world?

In 1885 the West was mainly an English-speaking country, with some French spoken in some parts. By 1891 it was already polyglot, but in recent years it has become, for the most part, again English-speaking, in spite of the many different racial groups that make up the present population.

Those seeking the cause of sometimes puzzling customs, modes of thought and behaviour of present-day Western Canada might well ponder on this piece of British homespun cloth, called the prairies, that has been so richly embroidered with so many different colourful racial patterns.

It must be noted, too, that the West has surely demonstrated above all that no one race is better than another. They are simply different.

Chapter Seven

The Drought Years

DURING THE 1880's, prairie settlement suffered a most serious setback. A series of drought years occurred, with low yields, frosted grain and wet falls. 1883 was a particularly bad drought year. There were early frosts in the Northwest Territories and while Manitoba had a yield of 21 bushels to the acre, the grain was badly damaged by frost. In 1884 Manitoba suffered from a wet fall which prevented the grain from ripening properly. 1885 was a drought year in Alberta and Saskatchewan. 1886 was an equally bad drought year in all three provinces. 1887 saw a bad drought in Alberta. 1888 had a good precipitation in each of the prairie provinces but 1889 was an almost complete crop failure because of drought and early frosts in all three prairie provinces.

During these bad years Western Canada lost much of its reputation and allure. Many of the settlers were completely disillusioned and left the country, but in 1885-1886 occurred a most important event; that is, the discovery for Western Canada of summerfallowing. It had much to do with reviving agriculture and the hope of profitable production for all the settlers. It was thought at first, that with this method crops could be produced almost regardless of drought. (This was not quite correct, as more investigations have disclosed, but it was certainly partly right.)

The discovery of summerfallowing reveals how great things can come about sometimes by pure chance. In 1885 the NorWest Rebellion was going on. A British column under General Middleton was in the field against the rebels. General Middleton required horses. There was a large wheat farm by this time established at Indian Head called the Bell Farm. Most of the horses from the Bell farm were leased to General Middleton, with the understanding that they would be returned to the farm in time to cultivate the land

in the spring of 1885. The horses were late in being returned. Much of the farm land could not be ploughed until June, when it was considered too late to sow. So the land continued fallow for the whole of the summer of 1885 without growing a crop. In the spring of 1886 this land that had lain fallow was sown. 1886 was a bad drought year and the crop sown on stubble was almost a total failure. But a good yield was harvested on the land that had lain fallow all through the summer season.

Few, if any, however, at the time attributed the better yield on summerfallow to the simple fact that the land lying bare during the summer had accumulated the 1885 summer rains, which were therefore available for the crop of 1886, for it is recorded that the Government Agent at Brandon, in his report, said the better yield on summerfallow had occurred "because the stubble and weeds are ploughed under and have time to rot. The grain also becomes settled by the winter frosts and snow and evaporation is slow." This high yield on summerfallowed land on the Bell farm attracted a great deal of attention and the practice slowly spread and gave new hope to farmers of producing a crop in a dry year.

1856

In 1888 the system of Dominion Experimental Farms was established. A Branch Farm was set up at Brandon and one at Indian Head. In 1889 the Indian Head Experimental Farm reported as follows:

"Our season points to only one way in which we can in all years expect to reap something. It is quite within the bounds of probabilities that some other and perhaps more successful method may be found, but at present I submit that fallowing the land is the best preparation to ensure a crop."

So it appears that it is to the Bell Farm we must give credit for the discovery of summerfallowing on these prairies, and to the Indian Head Experimental Farm for later scientific observations and experiments with summerfallowing, and for the sound advice it gave to farmers.

We spoke of the discovery of summerfallowing, but perhaps it would be truer to say the discovery that this system was useful for the prairies, for all through ancient agricultural literature there are references to fallow land, which probably means summerfallowing, and it seems certain that other areas in the world, particularly northern China, a semi-arid area similar to our prairies, and with a record of wheat farming for thousands of years, must long ago have discovered this simple method of preserving two years' moisture to assure one year's crop. The Bible, too, that sound source of agricultural advice, here and there mentions fallow land.

Regardless, however, of who originally discovered summerfallowing, the fact is that the method worked and gave new hope and

inspiration to the settlers who remained. The news of the better prospects soon spread, and immigration started again, accentuated greatly by the very fine crop of 1888. True, 1889 was a bad drought year, but by this time many farmers were practising summerfallow and so no doubt had at least fair yields on that portion of their farms.

The settlers, alas, suffered from other troubles than drought, which they were not allowed to forget. They were continually bedevilled by early frosts, for while Red Fife escaped the frosts much better than did the older wheat varieties, it still was caught, particularly as the settlement spread further to the north. Hail also gave much trouble. Mr. Alexander Kindred, a pioneer of Moffat, Saskatchewan, wrote in 1890:

“We summerfallowed that year (1889) for the first time and, to show the optimism we put in in 1890 every acre we could. We had wheat standing to the chin but on July 8th a hail storm destroyed absolutely everything. My hair turned grey that night.”

Nothing could be done to prevent hail, but it was thought that frost damage could be averted if an earlier wheat than Red Fife could be introduced. We shall later show how under the able guidance of William Saunders, assisted by his talented sons, Charles and William of the Dominion Experimental Farms, an earlier variety even than Red Fife — Marquis — was made available in 1910 and again gave new life and hope to the prairie farmers.

Chapter Eight

Times of Trouble

THE EARLY DEVELOPMENT of the West was interrupted by two other forms of trouble, both of them based on the fears of the Metis that their farming lands would be taken from them. The first occurred in 1869-1870 and the second in 1885.

(The Metis in Manitoba, by the way, were given “scrip”, or a document giving the ownership of a piece of land of 240 acres on any land that was open. 6,034 pieces of “scrip” were given, which totalled 1,448,160 acres. The Metis attached little value to a piece of paper, and so often readily sold this “scrip” to land speculators for next to nothing and in some cases for a horse or for a little liquor. The same kind of “scrip”, but this time for 160 acres each, was later given to participants in Colonel Wolseley’s expedition to the Red River. Some 400 claims were filed under this regulation.)

Louis Riel, one-eighth Indian and seven-eighths French Canadian, became in each period the head of the movement. Earlier writers called Louis Riel, a selfish, ignorant half-breed, rebel

and murderer. Later historians, however, who had access to a greater volume of documents, offer a kinder view. They describe Riel as an educated, unselfish patriot, of high ideals, who sacrificed himself to ensure justice for his fellow Metis. The population of the Red River area in 1870 showed a total of 11,963 inhabitants, made up of 1,565 whites, 9,840 Metis and 558 Indians who were settled on the land.

The following is a summary of the events as related by Morton, in his "History of the Canadian West," and by Joseph Kinsey Howard in his recent book, "Strange Empire."

On November 19th, 1869, the Hudson's Bay Company surrendered to Great Britain certain of the rights over Rupert's Land the Company had held from the British Crown since 1670. From this date, November 1869, the area became a Crown Domain of Britain and the Hudson's Bay Company no longer had any legal authority over the people. Great Britain transferred this Rupert's Land to the Dominion of Canada on July 15th, 1870. Between these two dates, November 1869 and July 1870, there was no official government in the West to maintain order, for Britain had failed to send any governing officials, and Canada, of course, had not yet any legal authority over the area.

Grave dissention occurred in the settlement. One party desired annexation by the United States. Another annexation by Canada. And still another group wanted the area to remain a Domain of Great Britain. So the people of the areas, to maintain law and order, elected and set up a Provisional Government (as they had a right to do) and with the blessing of the Hudson's Bay Company. Louis Riel was made President of the Council. Canada and Britain later recognized this Provisional Government.

Canada appointed a former Cabinet Minister, Mr. McDougall, to proceed to the Red River Settlement, and to assume the duties of Lieutenant-Governor — this before Canada had any legal rights over the territory.— William McDougall sent an advance party to survey the Red River lands long settled by the Metis farmers. This action augmented the fears of the Metis that Canada intended to confiscate their lands and to "swamp them with strangers", as was indiscreetly threatened at Ottawa.

The Provisional Government ordered Mr. McDougall and his surveyors out of the country. Mr. McDougall then announced that he had a document from Queen Victoria appointing him Governor of the area. This document was a forgery and confirmed the fears of the Metis that unless they resisted these illegal encroachments they would lose their farming lands.

The Dominion Government repudiated McDougall. The group agitating for annexation to Canada revolted against the Provi-

sional Government and issued a call-to-arms. A number were arrested, including the leaders, Scott and Schultz. All, however, were released after giving their word of honour they would no longer engage in revolt. They did not keep their word. Some were again arrested but escaped. Scott and one or two others were caught the third time and confined to jail. Scott threatened publicly that he would kill Louis Riel, and on one occasion assaulted the President. It was decided that the peace of the country was in danger as long as Scott could influence his associates. Scott was tried by court martial for treason, found guilty and shot. This action angered the people of Ontario where Scott had been born. Ontario became greatly agitated by speeches of Dr. Schultz. Religious and racial intolerance played their part. The Government of Ontario offered \$5,000 for the capture of Louis Riel.

An armed force was later sent under Colonel Wolseley, consisting partly of British troops and partly of auxiliary volunteers from Eastern Canada, not to oppose the Provisional Government, but to maintain law and order after the new Canadian Lieutenant Governor, Mr. Adams G. Archibald, arrived, which he did in September, 1870.

The Provisional Government, under Louis Riel, made all arrangements to welcome the military force and to turn over the country to Canada. This force had to make a difficult and long journey from the Great Lakes to Winnipeg. Louis Riel sent a force of Metis to clear a portion of the road that was impassable, to enable the expedition to have access to Lake Winnipeg. Unfortunately, after arriving at Lake Winnipeg, severe storms occurred which dispirited the soldiers. Louis Riel's emissaries reported that some members of the approaching force were in bad humour and intended to hang Louis Riel and the members of the Provisional Government. Riel, fearing bloodshed, then ordered his people to disperse quietly to their homes. He himself retired for safety to Pembina in the United States.

The Riel Government had maintained peace and order in the area for ten months, with the loss of only one life — that of Scott. In a few days there were many casualties inflicted by the incoming force. Temporary peace fell on the settlement. So, for the moment, ended this greatly misunderstood episode.

(Mr. Howard thinks that Louis Riel, by his insistence on flying the Union Jack, probably saved the territory from annexation by the United States.)

Out of the Provisional Government was born the Province of Manitoba. Riel had left the country for safety in 1870. In 1871 Manitoba feared an invasion from the United States by the Irish Fenians under one O'Donoghue. The Wolseley Expedition, with most of the Ontario volunteers, had returned home, so Governor Archibald asked the Metis to re-arm. Louis Riel returned from

the United States, headed the Metis, re-armed and drilled them and placed this force at the Governor's disposal to resist the threatened invasion.

Part of this invading force crossed the border, were promptly captured by the Metis forces and turned over to the custody of U.S. troops at Pembina. Governor Archibald reviewed the Metis forces and publicly thanked them and Riel for their services. The Lieutenant Governor's action, however, further angered the people of Ontario who still had an offer outstanding of \$5,000 for the capture of Riel.

In February, 1874, Riel was elected a Member of Parliament for Provencher by acclamation. He proceeded to Ottawa and was duly sworn in as a Member of Parliament. Ontario became furious. Intense political dissention ensued and the Government suggested Riel should temporarily retire to the United States. The Dominion Government granted him \$1,000 for his expenses.

Meanwhile a new Lieutenant Governor, less sympathetic to Riel, had been appointed in Manitoba. The Manitoba Legislature issued a warrant against Riel for the murder of Scott, and in **absentia** condemned him to exile for five years. The Government of Canada then granted an amnesty to Riel for all acts committed under the Provisional Government of 1870, but confirmed the five year exile. Riel left the country to reside in the United States. (Neither the Dominion Government nor the Province of Manitoba actually had any jurisdiction over any acts committed by Riel during the life of the Provisional Government of 1869-1870 because Canada did not then own the territory.)

As the new settlers swarmed into Saskatchewan, new troubles developed. The Metis' long settled lands were again being surveyed in a manner the Metis did not approve of. Some of their lands were seized illegally by the new settlers.

The Metis complained bitterly. Meanwhile, the new white settlers, too, were seething with discontent over their own injustices. The first farm organization was set up — the Farmers' or Settlers' Union — with Mr. W. H. Jackson as secretary. Petition after petition was sent to Ottawa by both the Metis and the Farmers' Union to have their grievances redressed. The Dominion Government did not even acknowledge most of these petitions and did nothing. This angered the two groups. The Farmers' Union considered armed revolt.

In 1884 a delegation of four people was sent from Saskatchewan to Riel in the United States, asking him to return to head a movement for the securing of justice from the Dominion Government. Louis Riel hesitated but finally accepted. He found the country aflame with discontent and agreed that only an armed de-

monstration could persuade Ottawa to send a Commission to look into the troubles. The Government in Ottawa took alarm and dispatched troops under General Middleton. "In answer to our petitions," Riel said, "the Government sends Police."

The opposing armed forces assembled. A Detachment of Police was defeated by the Metis at Duck Lake. Riel refused to permit any pursuit and so saved many lives. Middleton's forces were fought to a draw at Fish Lake by the Metis, and at Cutknife a separate Detachment was defeated by an Indian force under Poundmaker. Finally the main Middleton force engaged the Metis at Batouche and after a four-day battle the Metis were defeated.

The Metis dispersed to their homes and Riel surrendered to General Middleton. Riel was tried at Regina for high treason, found guilty, with a recommendation to mercy. Petitions and pleas for commutation poured in from many countries, but Riel was hanged on November 16, 1885, going to his death with calmness, courage and dignity. He was buried in the grounds of the Cathedral at St. Boniface.

Riel's execution caused a storm of agitation in Eastern Canada. Some were glad to hear of it. Others thought it another blunder on the part of the Government. Ontario paid the \$5,000 reward.

The battle revealed the high courage of the Canadian Militia and the gallantry and humanity and superb marksmanship of the Metis. The 90th Regiment of Winnipeg (now called the Royal Winnipeg Rifles) won an enviable reputation for keenness and for their impetuous final charge. The Metis christened them "The Little Black Devils" which soubriquet has clung to them to this day.

So ended this sad, quite unnecessary rebellion. And yet — the pity of it! For one single sympathetic official representative from Ottawa could at any time have prevented the rebellion. Almost all observers at the time considered that the prime cause of the rebellion was the unpardonable bungling of the Dominion Government, its indifference towards the hardships and injustices suffered by the new settlers, and its callous and cruel neglect of the Metis. As Riel said, he did not ever intend to make war but only to put up an armed demonstration to draw to the attention of the Government the urgency of the situation.

One cannot help but feel, when reading the documents of the day, that the historians of the future may place Louis Riel and the Metis in a much better light than they are now held by many.

Chapter Nine

Some of the Factors Responsible for Western Canada's Development and Growth

A NUMBER of factors have been responsible for the truly remarkable increase that has taken place, since 1880, in the production and successful marketing, the world over, of Hard Red Spring Wheat from our Canadian prairies.

As has already been pointed out, one of them was the discovery of summerfallowing. Another has been the introduction of new varieties of wheat.

Over fifty different varieties of wheat have been tried and used in Western Canada since the days of the Selkirk Settlers in 1812. Of these, however, only a few stand out as great stars that won acceptance over the whole of the West, although there have been a number of varieties which showed good merit for regional usefulness.

The great stars were **Red Fife**, introduced about 1870, **Marquis**, introduced in 1911, and **Thatcher**, introduced in 1935.

The farmers of the Red River settlement first used wheat varieties which were brought in by the settlers themselves from different parts of the world, such as Norway White — said to have been brought in by the early Selkirk Settlers — Assiniboine, Black Sea, English, Irish, Prairie DuChien and Scotch Fife, Club, Golden Drop, White Russian, Odessa Red and Converted Scotch.

All these early varieties were displaced after 1870 by the famous **Red Fife**, (which apparently was a different variety from the Scotch Fife of earlier use.) Red Fife was imported into the settlement about 1870 from the United States, whence it had come from Ontario after it had been selected by David Fife in 1843. Red Fife soon won a fine reputation for its high milling and baking qualities with British millers.

Settlement began to spread far away from the Red River settlement, and it was found that Red Fife — because of its lateness in maturing — was caught too often by early fall frosts. An effort was made by Dr. William Saunders and his sons, of the Dominion Department of Agriculture, to produce a variety that would be of as good quality as, but earlier than, Red Fife. Quite a number of varieties were produced and tried out, including Blue Stem, Bishop, Early Red Fife, Federation, Hard Red Calcutta, Huron, Ladoga, Pacific Blue Stem, Percy, Prelude, Preston, Stanley, White Fife, White Russian, and finally, out of all experiments by the Saunders family, in 1911 came the great **Marquis**, which soon occupied the greater part of the wheat acreage of Western Canada and of the North Western part of the United States. Marquis dominated the whole wheat area until 1935.

Even Marquis, however, it was found, was attacked by early fall frosts in the more northerly areas of the West and along the Alberta Foothills. So efforts were made to produce varieties that would be earlier even than Marquis. These included Kitchener and Early Triumph (later named Red Bobs by Seager Wheeler), Kota, Pioneer, Renfrew, Reward, Ruby, Garnet, Supreme, Vermilion and Axminster. **Red Bobs** and **Garnet** alone of these were found suitable for fairly large regional areas. Red Bobs — about five days earlier than Marquis — was used widely along the Foothills and in Southern Alberta. It was later found, however, to be rather poor in milling and baking qualities, and so was degraded to a No. 3. Then Garnet, the very earliest spring wheat variety, bred by Dr. Saunders in 1905, and selected later and introduced in 1923 by Dr. L. H. Newman, then Dominion Cerealists, was used in the northern areas and along the Foothills of Alberta because it was some ten days earlier than Marquis.

During this period, some people favoured bearded wheats, claiming they were higher yielding than awned wheat such as Marquis. So there were introduced Reliance, Ceres and Canus. They found acceptance only in certain areas.

Meanwhile, however, wheat stem rust was causing serious losses with prairie crops. A number of plant pathologists and plant breeders in the United States produced **Thatcher**, which was imported into Canada in 1935. It was resistant to all then known races of rust. Thatcher rapidly and almost completely displaced Marquis. The Rust Research Laboratory at Winnipeg, with its corps of plant pathologists and plant breeders, and the University of Saskatchewan, were working on the problems of rust-resistant wheats and produced varieties that for certain areas were considered superior to Thatcher—Apex, by the University of Saskatchewan, Coronation, Reliance, Regent, Renfrew, Renown and Redman, by the Dominion Rust Research Laboratory at Winnipeg.

Rescue, developed by the Dominion Experimental Farm at Ottawa, a saw-fly resistant wheat, was introduced in 1946 for the saw-fly area. Saunders Wheat, also developed by the Farm, was introduced in 1947 to displace, because of its earliness and better quality, Red Bobs and Garnet.

In 1951 came a new race of rust designated as 15-B which infected the wheat crops of the United States and Manitoba. Fortunately, the Rust Research Laboratory, anticipating 15-B, had for years been working on a variety that would resist this rust race. They were successful in producing what is, at this writing, temporarily known as C.T. 186, to be released during the winter of 1953 ready for spring seeding in 1954. This new variety has been licensed and given the name of "Selkirk".

It is to be noted that the standard set by the Government for the quality of all new wheats is that they must be equal to Marquis in milling and baking qualities.

A glance at these many varieties reveals the immense amount of quiet, patient work that has been done throughout the years, and is still being done, by talented plant pathologists, plant breeders and their associates in the development of new varieties to suit the conditions of these prairies. This good work has added greatly to the wealth of our farmers, and so indirectly to all of us.

Another great invention was a startling improvement in milling. This coincided with the first large-scale production of wheat on the prairies and enabled Hard Red Spring Wheat, as produced in Western Canada, and in the Western part of the United States, to be successfully milled into a high grade of flour. Had it not been for this invention, too, it is highly probable that Hard Red Spring wheat, instead of being, as it is today, the world's highest quality wheat, would be in much less demand and would command a lower price than other wheats and so would not be as extensively grown on the prairies as it is at present.

From time immemorial wheat was milled into flour by grinding the whole grain between two stones in one operation. This system was quite satisfactory for wheats generally found in Europe and the eastern part of the United States and in Eastern Canada, for these wheats were soft and mellow and produced an acceptable flour.

In the late 1700's, wheat was grown on the large flat plains of Hungary. This was Hard Red wheat, and it was found that the stone mills could not properly grind this wheat into flour because the kernel was extremely hard and its skin was friable and much of the bran or husk stuck to the gluten. Consumers objected to these bran particles in the flour and bread and so the flour produced from Hard Red Wheat, ground in stone mills, could only be sold at a low price.

Efforts were therefore made to devise a milling process that would grind Hard Red wheat into purer flour. A Lancashire iron-monger — Wilkinson by name — invented iron rollers. This new mill was improved by a Swiss Engineer — Sulzberger — and one was erected in Budapest, Hungary, around 1840. Sulzberger used chilled iron rollers. Around 1870, however, porcelain rollers were introduced, these making a still further improvement. All Hungarian mills were soon equipped with mills using iron or steel and later porcelain rollers, which produced the highest quality flour in the world. This system of milling began to be called "the Hungarian Process."

With this roller process, wheat is not ground but is gently crushed or broken down gradually by successive stages of rolls, and

the bran and germ are readily separated from the flour. This gives a cleaner and higher quality product than could possibly be produced by grinding Hard Red wheat in stone mills.

By this time Vienna had become Europe's leading city for high grade bakery products made from flour milled from Hard Red wheat by the roller mill process. In 1873, Vienna held a World's Fair and many American and British millers for the first time tasted the products of the Vienna Bakeries. They inquired about the flour. Mr. Washburn, of the Washburn Mills, Minneapolis, then Governor of Minnesota, hearing of this, and realizing that the Western States could grow much more Hard Red wheat than could Hungary, sent, in 1879, for Hungarian engineers to erect Hungarian roller mills in Minneapolis. Soon Minneapolis flour attained an equal reputation with Hungarian flour, and there ensued, the world over, a tremendous demand for this high quality product. So the new milling process enabled wheat to be grown profitably in the Western part of the United States and in Western Canada.

All the standard works of reference tell us that the Minneapolis millers were the first to introduce improved roller mills from Hungary into the North American continent. The Ogilvie Flour Mills Company, Ltd., pioneer millers of Canada in a book recently published entitled "Ogilvie in Canada, Pioneer Millers, 1801-1885," tell us, however, that in 1871 — two years before the Vienna Fair of 1873 — Alexander Walker Ogilvie investigated in Hungary what was then known as "the Hungarian Process" of milling and the statement is made that "on his return the millstones in the Glenora Mill were replaced by steel reduction rolls." This was in 1872-74. It seems, then, that the Ogilvie Mill in Glenora, Ontario, was equipped with rolls before they were used in Minnesota.

Ogilvie records also show that in 1881 Ogilvie's established the first flour mill in Western Canada, in Winnipeg, and that this mill was equipped with rolls.

So it appears that the farmers of our prairies and of the Western United States, and everyone else who is concerned in the great industry of agriculture in these two countries, owe a debt of gratitude to the Lancashire ironmonger, Wilkinson, to the Swiss engineer, Sulzberger, and to those Hungarians who had the foresight to equip their mills with this new milling process, and who demonstrated their process to the millers in Canada, the United States and Britain.

Chapter Ten

The Grain Merchants

THE PRODUCTION, processing, transporting and marketing of prairie grains — one billion, three hundred million bushels in 1952 — constitutes the largest single industry of Canada. This

industry requires today the services of over 5,000 country elevators and a number of large Grain Terminals, at Port Arthur, Fort William, Vancouver, New Westminster and other places, and thousands of railway box cars. This vast, well-organized, efficient industry has developed since the early 1880's, for we find that the very first grain elevator erected on the prairies was at Niverville, Manitoba, in 1879.

As has been shown, some grain had been grown on these prairies in the very early days of the Hudson's Bay Company, at their various trading posts. The Hudson's Bay Company, therefore, was actually the first grain producer, processor and, it might be said, grain merchant on the prairies. This condition continued until the advent of the Selkirk Farm Settlers, in 1912. From then on increasing numbers of farmers, other than employees of the Hudson's Bay Company, began to grow wheat and other farm products to feed the gradually increasing population of the Settlement, which had a population in 1856 of 6,691 persons and in 1871 of 12,228, which included 1,575 whites.

Who, then, one might ask, were the early Grain Merchants, other than the Hudson's Bay Company, in the Red River Settlement? For someone must have purchased wheat and other grains from the farmers and have distributed these products to those who required them. Unfortunately, no books or pamphlets have been written on this particular subject. A few references, however, are found in the records of the Hudson's Bay Company, and from 1858 on there is a fair amount of information contained in the "Nor'Wester", a fortnightly newspaper published in what is now Winnipeg, followed by a few issues of "The New Nation" in 1870, by "The Manitoban" from October 1870 to 1878, and by "The Manitoba Free Press" from 1878 onwards.

From all this one gathers that after 1812 the Settlement became in general self-sufficing with wheat, flour, bread and meat. In years of poor crops, some food had to be imported but in years of abundant crops, when there was a surplus over local needs, farmers complained then, as now, that when there was an abundance, farm products fell to a low price but that the price of the goods they had to buy did not fall.

There was an increasing outcry by farmers for outside markets for their products, but export or outside markets are only possible when the quality of the product has won a reputation, when communication is swift and sure, when ample and quick transportation is available at cheap rates, and when merchants specialize in exporting. These essential conditions did not exist in the Settlement until 1879, when the Settlement was connected by rail with St. Paul and so to the markets of the world, and better still after 1883, when Winnipeg was connected to Europe by the All-Canadian rail route. In the meantime, then, before the railways, surpluses brought as many headaches in odd years to the settlers as did shortage of food to the Settlement in years of poor crops.

In 1862 an abundant harvest was realized. But just before this, six hundred British soldiers (who had been brought in to deal with Indian outbreaks), and who had formed a good market for farm products, had departed. Money became scarce and so a firm of General Merchants in the Settlement — Messrs. Ross and Caldwell — advertised that in order to help they would purchase from farmers fine white flour and clean dry grain for a period of a few weeks. They offered the following prices: Wheat per bushel, cash 3s. 6d.; half cash and half goods, 4s. 0d.; all goods, 4s. 6d. For flour from the farmers they offered: cash, 12s. 6d. per cwt.; half cash and half goods, 13s. 0d. per cwt.; and all goods, 14s. per cwt. Next to the Hudson's Bay Company, then, Ross and Caldwell, in 1862, were the first merchants on record to offer to buy the farmers' grain or flour for cash or barter.

In 1876, because of a crop failure in Ontario, Messrs. Higgins and Young, Winnipeg merchants (groceries, boots and shoes, crockery and glassware), shipped 857 $\frac{1}{6}$ bushels of Red Fife (all that could be obtained) to the Steele Briggs Seed Company of Toronto, paying farmers 85 cents a bushel; the first shipment of prairie wheat ever made. In 1877 a shipment of wheat was made from the Settlement to Britain. In 1879 Winnipeg was connected by rail with the United States, hence with world markets.

Meanwhile, the telegraph had been invented and this gave quick and sure communication. In 1884 the Canadian Pacific Railway was completed to the east and the first shipment of wheat to Britain by an all-Canadian route took place. At this time the quality of the flour made from Manitoba wheat was causing a sensation, and increasing demands ensued, for we find, in 1878, a number of Winnipeg General Merchants placing large advertisements to buy wheat for cash — A. G. B. Bannatyne; Higgins and Young; R. Gerrie and Company; Davis and Smith; and the Ogilvie Milling Company, all offering 60 cents a bushel for No. 1 Northern clean wheat.

So, with Winnipeg General Merchants handling grain, started the great prairie grain business which has become the largest single industry in Canada.

As has been pointed out, until 1880 surplus grains were bought and sold by general merchants, who stored the grain in sacks in their usual warehouses with other things they had imported and purchased.

By 1879 the volume of grain produced by Manitoba farmers was such as to warrant some merchants devoting their whole time as a specialty to the handling, buying, selling and exporting of grain. These specialized grain merchants therefore began to erect what were called "flat warehouses", with a capacity of from 1,000 to 15,000 bushels and somewhat later elevators with capacities from 15,000 to 40,000 bushels.

(At this time the population of Winnipeg had increased to 8,000 and from 8,000 in 1879 it increased to 25,000 in 1882. New settlers were passing through Winnipeg to take up land at the rate of 1,500 a week. Wheat exports for the year 1885 amounted to 3,455,400 bushels.)

In 1879 there was one single elevator in the whole of Western Canada. In 1890 there were 90 elevators and 103 flat warehouses at 56 points in Manitoba and 16 points in Saskatchewan, and by 1900 there were 454 elevators and 126 warehouses, including 375 elevators and 94 warehouses in Manitoba, 69 elevators and 24 warehouses in Saskatchewan and 10 elevators and 8 warehouses in Alberta. (Of the elevators and warehouses, more details will be given later.)

Up to 1896 all these elevators, with the exception of some owned by two large Milling Companies — the Ogilvie Milling Company and the Lake of the Woods Milling Company, which built elevators to purchase and store wheat for their own mills — were owned by individuals. Seldom did any one person or partnership own more than three or four elevators.

In 1897, however, a new phase of elevator operation came into being, with what are called Line Elevator Companies; that is, a Company which was formed to own, operate and manage a number of elevators. This was done in order to reduce the costs of the overhead expense of each elevator, to regularize and systematize the operations and to see that practices at elevators complied with standards that were proper and reasonable, but particularly to assure highly competent, skilled management, for it is obvious that a Company owning a number of elevators — fifty or more — could afford to engage the services of a more skilled manager for the whole fifty than could one single elevator. This competent management led to lower costs and greater efficiency, which naturally benefitted farmers by enabling them to have their grain handled in a more systematic and efficient manner and allow better services to be given.

The first Line Company started in 1896 and was called The Northern Elevator Company, with 42 elevators. In the same year was formed the Farmers Elevator Company, with 9 elevators. In 1898 were formed two more Line Companies, the Dominion Elevator Company, with 35 elevators, and the Manitoba Elevator Company, with 35 elevators. In 1899 a partnership called Bready, Love and Tryon started with 38 elevators. These five Line Elevator Companies between them owned about half the elevators then being operated. The remainder were still owned by individuals. Some of these Line Elevator Companies built new elevators, but for the most part, at the start, they purchased individual elevators already being operated.

So occurred the birth of the new system called the Line Elevator Companies, which to some extent was a copy of the system that for several years had been found economical and efficient in the United States.

It is interesting to note here that up to this time all these elevators were built, owned and financed by local Manitoba people, most of them merchants who began to specialize in the handling of grain as an exclusive business.

The superior management and savings in costs and greater efficiency of the Line Elevators, compared with the operation of a single elevator, soon became apparent, and as the years went by the number of elevators operated individually became fewer and the Line Elevator Companies increased the number of elevators each operated. Later new people with capital came in from Eastern Canada and the United States and built many more Line Elevator Companies, especially on the Great Northern and Grand Trunk Railways, which from 1905 to 1907 had opened up new farming territory. By 1910, out of a total of 1,860 elevators and 26 warehouses, there were 21 Line Elevator Companies operating a total of 1,266 elevators (an average of 60 each) including 707 in Manitoba, 904 in Saskatchewan, and 249 in Alberta, leaving 620 elevators and warehouses operated by individuals or small companies with 3 or 4 elevators each.

These Elevator Companies in 1899 formed an Association—The North West Elevator Association — which laid down rules and regulations of business conduct for their members. The charges at all elevators for receiving, cleaning and shipping grain, and insurance, were set at $1\frac{3}{4}$ cents a bushel, with twenty days free storage, and $\frac{3}{4}$ of a cent per bushel for each month of additional storage which included insurance. It was required that the rules and charges should be posted up in each elevator, and every farmer was to be given a ticket for his grain, whether it was stored or purchased, and on each individual load, and that a blackboard should be set up in each elevator with the prices of the day plainly marked thereon. This information for the farmer was required by The North West Elevator Association before the Manitoba Government set up government regulations in 1900 enforcing much the same requirements.

At the same time the Winnipeg Board of Trade, founded in 1879, took a keen interest in the welfare of the farmers. A President, in the early 1880's, in his annual address said:

“It was the fixed principle of the Board of Trade to do all in its power to advance the interests of farmers, recognizing that the commercial interests of Winnipeg are wrapped up with those of the agricultural community.”

(This principle has been held steadfastly ever since by the Winnipeg Grain Exchange and by all members of the Grain Trade in Western Canada.)

The Winnipeg Board of Trade of those early days exercised functions now filled by several governmental bodies. It was responsible for the fixing of grades and standards for wheat, oats and barley, and for hiring an inspector to grade the farmers' grains. The Board advised the Government on the best varieties for farmers' use and watched out for the supply of good seed.

By 1883 the production of grain had so expanded, and the prospects of exports were so hopeful, that the Board of Trade set up a Grain Exchange, in order to standardize grain buying and selling practices, and to take the place of undeveloped, unsystematic pioneer conditions, which had hitherto prevailed in the buying and selling — mainly by barter — of grain. For lack of support, however, the Exchange dissolved.

The production and export of grain continued to increase so rapidly after the railroads to the south and east were functioning in 1883, that another meeting of grain merchants was held on November 24th, 1887. This resulted in the formation of "The Winnipeg Grain and Produce Exchange" by the following men: D. H. McMillan, G. G. Galt, J. A. Mitchell, R. P. Roblin, K. MacKenzie, G. R. Crowe, A. Atkinson, N. Bawlf, S. Spink, D. G. McBean, Geo. J. Maulson, S. P. Clark, G. N. Bell, W. A. Hastings and W. W. and John Ogilvie. These men can surely be considered as the pioneer fathers, not only of the Winnipeg Grain Exchange, but also of the grain handling and marketing organizations of the present day. The membership of the original organization soon increased to fifty.

These pioneer merchants, and others who came in later, soon built flat warehouses and elevators in Winnipeg and at many country points, until we find, from early records of the Board of Grain Commissioners in 1890, that there was in that year a total of 90 elevators and 103 flat warehouses, with a total storage capacity of just over 4 million bushels situated at 83 country points in Manitoba.

So now, with export markets, good transportation, quick communication and an efficient and well-organized grain trade there was nothing to stop greatly increased production of wheat and other grains and this, in fact, went rapidly ahead from that time on.

Chapter Eleven

The March of the Elevators

IT MIGHT BE of interest to describe something of the difference between the flat warehouse of early days and the standard elevator which gradually supplanted the warehouse.

A warehouse for handling commodities and goods is as old as the history of trade and commerce. Whenever merchants bought or bartered commodities and goods and stored them for any length of time, a warehouse was erected. Such warehouses were established at depots and bartering places along ancient caravan routes in Asia and Africa; they were also erected at all ports and at many inland towns and settlements where the farmers' grain and other products were purchased and bartered by merchants.

In the museum of the Searle Grain Company at Winnipeg there is a replica of a model of a grain warehouse that was taken from an Egyptian tomb 3,100 years ago, and which was buried with the deceased, who was a Superintendent of Grain in those days. This model is 18 inches square and 12 inches high and contains 7 separate bins. The bins are not open at the top as they are with a flat warehouse but are roofed over, and each bin has a small opening at the top. There is an inclined ramp going from the floor to the top of the bins and the elevator attendant carried on his back a basket filled with grain and dumped it into the proper bin. The grain was taken out of a small opening at the bottom of each bin.

This ancient Egyptian granary was actually a cross between a flat warehouse and a modern elevator. Incidentally, it indicates that there was a well-established grain trade in Egypt in those ancient days.

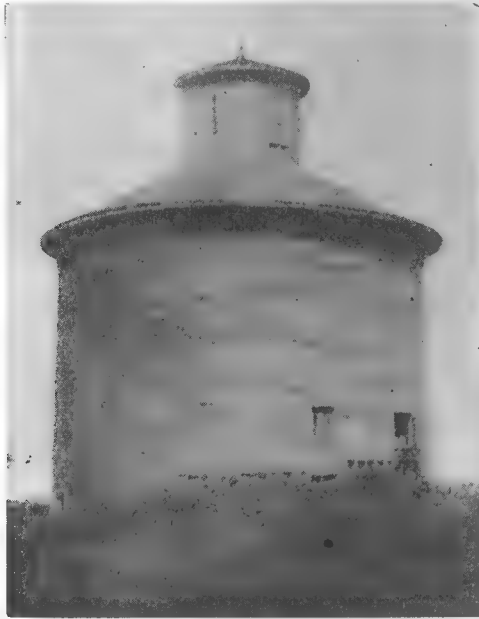
Flat warehouses, as used for grain handling in Canada, varied from 2,000 to 15,000 bushel capacity. They were from 10 to 20 feet in width and from 20 to 50 feet in length, and from 8 to 10 feet in height. An alleyway ran through the centre and on each side of the alleyway open bins were built. Grain was received in sacks, weighed on a scale and then dumped into each bin. At unloading time the grain was shovelled out of each bin into a hand cart, which was pulled or pushed alongside a car sitting on the railroad track. The grain was shovelled from a cart up into the railway car. It usually took one whole day to fill a car.

Many of these old warehouses are to be seen today situated alongside country elevators, being used for the storage of flour and coal. A well-preserved example, said to be one of the first flat warehouses ever built, is to be seen at Gretna, Manitoba, and it is being used as an annex to hold grain from the elevator of the Henry Ritz Company. This warehouse still contains the original scale in the alleyway but it is, of course, now buried under stored grain.

The standard elevator — built originally to standards set by the C.P.R. — owes its name to the fact that grain is elevated and stored, not horizontally on a flat surface but vertically into several bins that rise up from the ground some fifty to sixty feet high. The grain is handled loose. A whole truckload can be dumped into a pit after passing over a weighing scale, and by means of an endless

belt, fitted with many buckets, the grain is elevated to the top of the bins and, through an ingenious device, can be directed from below by the operator into any separate bin. These elevators are built alongside railroad tracks. A car can be loaded in about fifteen minutes, the grain flowing from the elevator into the car by its own gravity — a great advance over a flat warehouse, where the grain had to be shovelled up into the car by human muscle.

Elevators were first operated by horsepower. This was supplanted by the steam engine and later by the gasoline engine. At present they are operated by the more efficient Diesel engines and, in places, by an electric motor.



In 1879 there was one single elevator in Manitoba and the whole of the North West Territories. This was at Niverville, Manitoba. It was later known as McArthur Elevator, and had a 25,000 bushel capacity. This round elevator, reproduced from an old photograph, was erected for Mr. Hespeler, Canadian Immigration Agent, who was sent by the Canadian Government to Russia to bring to Niverville and vicinity 65 Mennonite families in August 1874. (The first square standard elevator, of 30,000 bushels capacity, was erected at Gretna, Manitoba, by the Ogilvie Milling Company in 1881). Mr. John Witick helped to build this Hespeler elevator in 1879 and later became an Elevator Agent at Niverville. His son, Albert Witick, now aged eighty-seven, still living at Niverville, well remembers this Hespeler elevator. Albert Witick also became an Elevator Agent at Niverville for the Ogilvie Milling Company. Mr. Albert Witick's son, Gordon, today operates the Ogilvie Elevator at Niverville. So three generations of the same

family have been Elevator Agents at the same point — Niverville — probably a record for the West.

The first elevator to be built in Winnipeg was in 1885. It had a capacity of 65,000 bushels. It is thought that it was built by Mr. D. H. McMillan, who in 1887 became the first President of the Winnipeg Grain and Produce Exchange.

By 1882 there were six elevators or warehouses at the following points: High Bluff, Winnipeg, St. Boniface, Niverville, Gretna and Portage la Prairie. A diligent search fails to reveal any records from 1882 to 1890. In 1890 there were seven elevators in what is now Saskatchewan, situated at Moosomin, Indian Head, Fleming, Wolseley and Regina, and twenty warehouses at ten other points. There were also eighty-three elevators and eighty-three warehouses at a total of fifty-six points in Manitoba, or a grand total of ninety elevators and a hundred and three flat warehouses at eighty-three points in Manitoba and the North West Territories, with a combined storage capacity of 4,286,000 bushels and owned by a hundred and seven different individuals. (This was before the days of the "Line" Elevator Companies.) Manitoba millers, of course, had to take in grain for their own use, and some, no doubt, engaged in addition in an export business. An old picture shows a Manitoba stone mill operated by a windmill with a flat warehouse adjoining, at which farmers in their wagons were delivering sacked grain.

It is evident, then, there was a considerable expansion in the building of elevators and warehouses in the eight years between 1882 and 1890, accounted for by the opening up of transportation in 1883 by the Canadian Pacific Railway from Winnipeg to the head of the Lakes, which enabled prairie grain to be exported to Great Britain and other countries via the Great Lakes, the St. Lawrence River and across the ocean. (The first shipment of wheat from the West by the all-Canadian route direct to Britain was made by Thompson and Sons of Brandon, in 1884, and consisted of 1,000 bushels of No. 1 Hard in sacks, the shipment taking twenty-one days from Brandon to Glasgow).

This same transportation, which allowed grain, principally wheat, to be exported, also made it easy and cheap for immigrants to come to the country in large numbers. We find, then, that during these eight years the basic requirements existed for the development of increased production, and to change a number of local prairie markets to a world market, i.e., an enormous acreage of empty fertile land; the attraction of this land to immigrants all over the world; relatively cheap transportation from the West to the markets of the world; telegraph and cable services; a considerable increase in population in Britain and other European countries, hence the demand for more food; and also a willingness in these densely-populated European countries of immigrants to seek better chances in the New World; the invention of rollers in

flour mills, that permitted prairie wheat to be ground into an acceptable flour; the opening of the Liverpool open "futures" market, which allowed British millers to buy on grade and to purchase more freely because they could "hedge" the grain; and last, but not least, the building of elevators with cheap bulk handling to keep pace with the increase of settlement, the expansion of production and of export demand.

The building of elevators and the export of grain was an entirely new field in the Canadian West. There was but little precedent to go by, and the Eastern Canadian market was well filled by wheat grown in Eastern Provinces. It was on new British and other export markets exclusively, then, that the prairie grain merchants had to depend, and the building of elevators was not only costly but involved considerable risk of the sparse capital that anyone owned in the West in those days.

The President of the Winnipeg Board of Trade, in 1882, remarked that "grain elevators were badly needed to serve the farmers." Considerable difficulty was found in inducing people to build elevators and to risk their capital. In order to assist the purchasing and export of the farmers' grain, the Canadian Pacific Railway offered to grant a monopoly of the shipping of grain in the district to any persons who would build a standard elevator according to C.P.R. standards on C.P.R. land, by giving the elevator the sole right to handle and ship grain at that point at reasonable charges to the farmers. This gave the elevator owner some assurance that he might have at least sufficient volume of grain to handle to warrant the expenditure of his capital. There seems to be no question that, had this monopoly not been granted at that time to elevators in each district, that nothing like a sufficient number would have been built, in which event farmers would have suffered severely. That the plan did work is shown by the following figures of how new elevators kept pace with increased population and grain production:

In 1881 there were 122,400 people in Manitoba and the North West Territories. In 1891 this had increased to 251,473, and by 1901 to 419,512. Wheat production in 1881 was one million bushels; in 1890 it was 16 million, and in 1901, 62 million bushels. Similarly, the number of elevators and warehouses increased from one in 1879 to 193 in 1890 (90 elevators and 103 warehouses) and to 580 in the year 1900. (454 elevators and 126 warehouses).

The Board of Grain Commissioners reports show that at the present time there are 5,385 elevators in the whole of the West (713 in Manitoba, 2,997 in Saskatchewan and 1,675 in Alberta) and that of these 5,385, 5,261 are owned and operated by Line Elevator Companies, which include the Alberta, Saskatchewan and Manitoba Wheat Pools and the United Grain Growers Limited, and that the average number of elevators for each company is 263,

leaving 124 elevators that are operated by individual owners, a few of which have two or three each. All these Line Elevator Companies, including the Alberta, Saskatchewan and Manitoba Wheat Pools and the United Grain Growers Limited, are keenly competing with one another to give the best possible service to farmers.

Chapter Twelve

The First Royal Grain Commission

BY 1899 farmers were beginning to complain about the exclusive right given to elevators to handle the grain in the district. Farmers wanted an alternative method of shipping their own grain, either from warehouses or straight into cars without using the local elevators. They complained about dockage, weights and grades. They feared they might be taken advantage of by insufficient competition.

These discontents became "very serious" and so the Government appointed a Royal Commission to inquire into the following complaints:

1. That a vendor of grain is at present subjected to an unfair and excessive dockage of his grain at the time of sale.
2. That doubt exists as to the fairness of the weights allowed by the owners of elevators.
3. That the owners of elevators enjoy a monopoly in the purchase of grain by refusing to permit the erection of flat warehouses where standard elevators are situated, and are able to keep the price of grain below its true market value to their own benefit and to the disadvantage of others who are specially interested in the Grain Trade and of the public generally.

The Commission made a thorough investigation into the practices of handling, storing, buying and shipping of grain, and took voluminous evidence from a large number of farmers, Elevator Agents and Companies.

The Commission, in its report, drew attention to the severe difficulty farmers had in getting their grain properly stored, handled and marketed in the early days of railway building (from 1883 to 1887). The Commission marked the improvement in this respect because of the steps taken by the Canadian Pacific Railway (in 1887) to encourage people with capital to build elevators alongside the railway tracks.

The report continued: "On the strength of such inducement a number of elevators were erected at different points by different

persons and corporations engaged in the business of milling, grain buying and exporting. After the year 1887, in which the crop was unexpectedly large, the number of elevators was greatly increased and they have gone on increasing in number since that time, being erected on the terms as originally offered by the Railway Company, and that the grievances complained of have arisen largely from the above mentioned protection offered by the Railway Company to Elevator owners to induce them to build elevators."

The Commission noted further that in order to make a profit with existing handling charges, that elevators would have to be filled and emptied three times in a season, but that there were too many standard country elevators to allow of each being so filled three times in a season.

The report continued: "We do not desire in any way to censure Elevator Owners or employees as a body but it is reasonable to believe that where there are so many elevators there will be employees who will take advantage of the farmers if it is in their power to do so. It seems to us that apart from any abuse of the power given by the Elevator system it is unfair to require a farmer to pay to have his grain pass through an elevator so long as either by loading direct on cars or by the use of a flat warehouse he can save or decrease that expense. We have reason to believe from the evidence that in cases where elevator employees appear to have dealt unfairly with farmers, the Elevator Owners have not profited thereby . . . There has been no evidence that Elevator Owners have been consenting parties to any acts of extortion."

The Commission recommended that railroads should be required to furnish cars to farmers for the shipping of their own grain, and that facilities should be provided so that farmers could load cars from the platform without their grain going through an elevator. The Commission thought that such a provision would alleviate much agitation and bitterness of feeling against the elevators then existing.

The Commission found considerable dissatisfaction as to the nature of the sieve employed for gauging dockage. They recommended a standard sieve should be used by all Elevator operators.

The Commission recommended further that the elevator scales should be inspected periodically by a Government Inspector, and that all elevators should be licensed, and that Government supervision over the whole handling of grain by elevators should be set up.

The Government sent investigators to look into the practices of Minnesota and North Dakota. Out of all this finally came the Manitoba Grain Act, which embodied most of the recommendations of the Royal Commission and many of the laws governing the

handling of grain in Minnesota and North Dakota and which instituted a considerable measure of government supervision and control over the operation of elevators. A Warehouse Commissioner was appointed and he was given wide powers of supervision and investigation in the Western grain area.

The Manitoba Grain Act was revised and amended in 1903, 1908 and 1912, and, together with the General Inspection Act of 1886 and the report of another Royal Commission set up in 1905-1906, became the foundation for the Canada Grain Act of today, which is considered to be the Magna Charta of the grain growers.

The origin and development of the Canada Grain Act and of the Board of Grain Commissioners will be dealt with fully later.

Chapter Thirteen

The Great Lakes — History

AN IMPORTANT FEATURE, most favourable to the development of our prairie provinces, is the geographical setting of the five Great Lakes — Superior, Michigan, Huron, Erie and Ontario. These are fortunately situated right along the natural line of transportation from the prairies to countries overseas which need our agricultural products.

As is well known, the cost of transporting products such as grain is cheaper by water than by rail, so the export of Canadian grain since the very early days has depended upon the water transportation from Fort William and Port Arthur to Montreal or Quebec on the St. Lawrence River, where the grain is transferred to ocean-going ships sailing straight to the many countries of the world. All this makes the Great Lakes today one of the most important international trade routes of the world.

The rail haul from the average country point in the prairie provinces to Fort William and Port Arthur is 950 miles, but from the head of the lakes — Fort William or Port Arthur — to Montreal the water haul is 1,217 miles, and then from Montreal to Liverpool, another 2,785 miles. It is the cheap water freight on the Great Lakes, of 1,217 miles, that makes such a difference to the cost of landing wheat in Liverpool and other European ports. Had it not been for the water transportation over the Great Lakes our prairie settlement and our production of grain would undoubtedly be smaller than it is today.

The story of the Great Lakes is one of romance and of great adventure. The intrepid French explorer, Champlain, discovered the eastern part of Lake Huron — Georgian Bay — in the year 1615 and Lake Ontario in 1616, fifty-two years before the first ship, the "Nonsuch", sailed into the Hudson's Bay in 1668.

Champlain discovered Lake Huron by way of the northerly Ottawa River, and Lake Nipissing, travelling then south through the Georgian Bay to Lake Simcoe, thence to the junction of Lake Ontario and the St. Lawrence River.

Etienne Brule, one of Champlain's Lieutenants, discovered the main body of Lake Huron, then Sault Ste. Marie, and the southern part of Lake Superior in 1618, and travelled as far west as Duluth on the south-western side of Lake Superior. Jean Nicollet, seeking the northwest passage to China, discovered Lake Michigan in 1634. He thought he had arrived at the China Sea and that the Indians he met were Chinese.

Radisson and des Grosseilliers discovered the Mississippi south of Green Bay off Lake Michigan in 1658.

Niagara Falls were first seen by the Franciscan Friar, Louis Hennepin. Hennepin and La Motte, under the direction of La Salle, built the first sailing ship ever to sail the Great Lakes, the "Griffon", at the head of Niagara Falls in 1679. In this ship, they discovered and sailed into Lake Erie.

Other early adventurers who explored the Great Lakes were Joliet, La Salle and the Jesuit Father Marquette.

Right on the heels of these French explorers came "the Men of God", concerned in making the savages into Children of God, doing their good work quietly and enduring incredible hardships while endeavouring to alleviate the lot of the Indians. First came the Recollect Fathers, then the Franciscans, and later the Jesuits. Father Joseph le Caron was the first, followed by Father Gabriel Sagard, Father Marquette, Father Nicholas Viel and Father Jean de Brebeuf, with many others. The annals of these Monastic Orders recount victories over evil, torture, defeat, martyrdom and death. These missionaries often gained the friendship of the Indians, however, and prevented the massacres of the exploring parties. Much credit, then, must be given to these "Men of God" for the exploration of the Great Lakes by white men.

The French explorers were but little concerned with settlement. Their eyes were centred on the fur trade. They were obsessed with the northern country, and their efforts were devoted almost exclusively to the area north of the Great Lakes, from Montreal and Quebec along the Ottawa River to Lake Nipissing, seeking furs. Their discovery of the Great Lakes to the south was almost incidental.

The British, however, following the steps of the French explorers, had their minds more on settlement of the vast country south of the Great Lakes. It is said that the French erected cedar crosses as signs of possession but that the British built forts and brought

in immigrants, who settled much of the country around and south of the Lakes. The French did establish one settlement at Detroit on Lake Erie by an explorer named Cadillac. Unfortunately, Cadillac was not backed up by France and eventually his fort and settlement fell to the British. It was undoubtedly, then, the urge to open up the Great Lakes for transportation, and to occupy and settle the vast area south of the Lakes, which brought the country first under the British and later under the American and Canadian flags. Supposing, however, that the French, who were in the country earlier than the British, had devoted themselves more to settlement and immigration than to the northerly fur trade, might not a large portion of the American continent today still be under the flag of France?

The first sailing ship to be built on the Great Lakes was by the French in 1679. This was "The Griffon", already mentioned. From this time on there was continual conflict between the French, who claimed all the Great Lakes and the surrounding country, and the British, who were steadily building forts and settlements of people along the shores.

It became apparent that naval superiority on the Great Lakes was necessary to ensure sovereignty by one side or the other. So, in 1755, the British built the first warship on the Great Lakes, christening it "The Oswego". It was armed with nineteen cannon. "The Oswego" was followed by several other warships. The French, too, began to build warships, and for the next six years the French and British fleets battled on the Great Lakes, with victories and defeats on each side, until in 1760 Montreal on the St. Lawrence, and under the French dominion, surrendered to the British. In the succeeding Treaty of Peace the Great Lakes, with their hinterlands, were ceded to Britain.

Now in the year 1775 came the Revolution of the inhabitants, mostly British, of what is now the United States against Great Britain. The battles between the Americans and the British hardly affected the Great Lakes and their hinterlands. By the Peace of 1782 an International Line was drawn through the Great Lakes, giving the British Colony of Canada and the Americans equal rights over the waters. All further differences were settled by the John Jay negotiations in 1794.

In 1812 there was war again between the United States and Britain, which to a great extent was fought by opposing warships on the Great Lakes, mainly on Lake Champlain and Lake Erie. Finally, on Christmas Eve of 1814, peace was declared, the International Boundary through the Great Lakes was re-confirmed, and with assurance that the waterways were to be used freely by both countries. This peaceful sharing in the transportation, trade and commerce of the Great Lakes has endured in a most friendly way ever since.

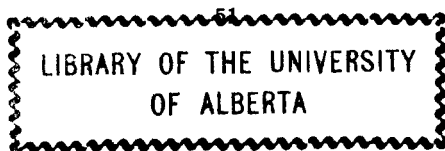
The first steamship on the Great Lakes was launched on Lake Ontario on September 7th, 1816, and was christened "The Frontenac". It was a boat of 700 tons, equipped with 50 H.P. engines brought over the Atlantic from Birmingham, England. The Americans immediately built a competing steamship of 220 tons, called "The Ontario". A new type of steamship, christened "Walk-in-the-Water," was built on Lake Erie by a Buffalo firm in 1818, and actually became the model of the graceful, fast-sailing clippers that were to be built on the Atlantic coast and in Britain for express services on the Seven Seas. Soon scores of sailing vessels and steamships were built to carry the increasing trade and new settlers across the Great Lakes.

It was soon found that the Great Lakes needed a water connection to the Atlantic Ocean, so in 1816 a number of adventurous Americans started the building of a stupendous canal, of 363 miles, from Buffalo on Lake Erie, through the wilderness to Albany, New York, from which point ships could sail down the Hudson River to New York City, and so to the Atlantic. "The Seneca Chief" was the first boat to sail this canal on October 26th, 1825, with great celebrations. The cost of moving freight from Lake Erie to New York Harbour dropped from \$120 to \$4.00 a ton.

The Canadians also had great visions, so in 1825 they began the digging of the Welland Canal, of 25 miles, around Niagara Falls, using forty locks and raising ships no less than 325 feet, thus making a direct connection between Lake Erie and Lake Ontario.

On November 27th, 1829, a graceful Canadian schooner, christened "Annie and Jane," made the first ceremonial passage across the Great Lakes, through the Welland Canal, and into the St. Lawrence, thence to the sea. Later other canals were built by the Americans to connect the Ohio and Mississippi waters with the Great Lakes. In 1856 the schooner, "Dean Richmond," actually took a cargo of wheat from Milwaukee and sailed directly through the Great Lakes to Liverpool, the first through shipment of grain from the Great Lakes to Europe.

For some years the settlements south of the Great Lakes had grown large quantities of wheat, and by this time flour mills had been erected at Buffalo, on Lake Erie. The first cargo of wheat shipped on the Great Lakes was by the sailing ship, "John Kinzie," from Chicago, on Lake Michigan, to the flour mills at Buffalo, on Lake Erie, in 1831. The first crude grain elevator erected on the Great Lakes was at Chicago in 1839. After this elevators were rapidly erected on the lakes from Chicago to Buffalo to Toronto.



Chapter Fourteen

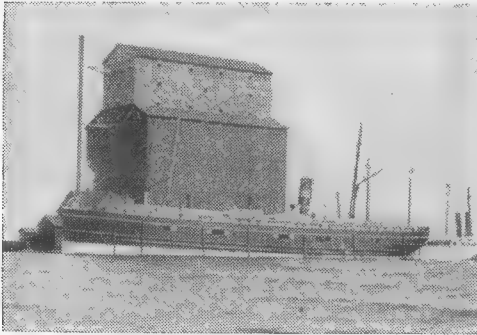
The Great Lakes

Transportation and Terminal Elevators

THE PRODUCTION OF WHEAT and other grains became a veritable flood to be shipped to markets through the Great Lakes. Other industries developed — timber, coal and iron ore, and later oil — all of which required the services of a great number of specially designed steamship and lake carriers to navigate safely through the violent storms which sometimes occurred on the Great Lakes. Today more than 2,000 vessels of all kinds are constantly plying up and down the Great Lakes, carrying grain, timber, coal, iron ore, pulpwood, paper, and general freight and passengers.

The first accommodation for handling grain on the lakehead was by a number of temporary sheds, erected in the summer of 1883, of which, unfortunately, no photographs are available. These sheds handled the first prairie grain to arrive at the lakehead — that is, the crop of 1883. This shipment of grain was in the S.S. "Erin", Captain Sullivan, Master. The grain was transferred from the sheds to the ship by wheelbarrows. This method was costly and incapable of handling the larger flow of grain that soon came from the prairies.

A terminal elevator, christened "The King", capacity 350,000 bushels, was therefore erected at Port Arthur by the Canadian Pacific Railway Company.



It was ready to handle the prairie crop of 1884. The first boat to load from this elevator was the S.S. "Acadian", Capt. Malcomson, Master. The flow of grain from the prairies increased still further, so at Fort William, in 1885, elevator "A" was built by the C.P.R., with one million bushels capacity. This el-

levator had the ability to unload nine cars simultaneously.

The sailing schooner, "Slige", owned by Messers. Graham and Horne, was the first boat to take grain from this Fort William elevator, a cargo of 17,000 bushels, in early 1885. The "Algoma" was the first steamship to take grain from the Fort William elevator in June, 1885.

The amount of grain pouring in from the prairies continued to increase, so that the elevators at Fort William and Port Arthur

became plugged. A large shed was built by the C.P.R. to hold 800,000 bushels of the overflow. This was probably the first "annex" ever built to an elevator in Western Canada. This great shed, however, had to be loaded by wheelbarrows and the grain shovelled by hand sixteen feet high. Nevertheless, even with this laborious method, each gang of four men unloaded three cars a day, and a total of eight to twelve gangs unloaded from fifty to sixty cars a day and so kept the railway line open.

Four more elevators were constructed by the Canadian Pacific Railway up to 1902. Now on the scene appeared the Canadian Northern Railway, which erected an elevator at Port Arthur of 1,250,000 bushels capacity, later enlarged to 2 million bushels.

Some of the men who occupied important positions in the early handling of these elevators are as follows: Harry Sellers, James Davidson, John McAvey, Jos. Redden, John Redden, W. Irwin and M. Sellers.

Terminal elevators, with their capacities in bushels, at the head of the Lakes, Port Arthur and Fort William, have increased as follows: In 1883, 1 terminal — 350,000 bushels; 1890, 3 terminals — 2,950,000 bushels; 1900, 5 terminals — 5,565,000 bushels; 1910, 15 terminals — 25,700,000 bushels; 1920, 18 terminals — 49,500,000 bushels; 1930, 26 terminals — 83,657,000 bushels; 1953, 30 terminals — 93,202,210 bushels.

Between the years 1942 and 1946 additional temporary storage, amounting to 53 million bushels, was erected to take care of the great surpluses of those days. This was later dismantled.

In 1885 the grain handled by these lakehead Terminals amounted to 1,500,000 bushels. By 1887 it had jumped to 4,500,000. By 1892 to 5 million bushels. By 1910 to over one hundred million bushels, and for the year 1952-53, to no less than 531 million bushels of all grains, which included 294 million bushels of wheat.

Thus from small beginnings in 1883, by 1933 — 50 years later, — the twin cities of Fort William and Port Arthur had become the greatest grain port in the world, and have held this eminent position to this day. This is highly creditable, particularly when one considers that all this grain is shipped only during the navigation season, i.e., from the middle of April until the middle of December, during which period the lakes are comparatively clear of ice.

The five Great Lakes are not naturally connected one with the other, or with the Atlantic Ocean, by navigable waterways. It has, therefore, been necessary to build channels and canals through which large freighters could safely pass; from Lake Superior to Lake Huron, from Lake Huron to Lake Erie, from Lake Erie to

Lake Ontario, and from Lake Ontario to the St. Lawrence River ports of Montreal and Quebec. Lake Erie, at Buffalo, is connected also with New York by the Erie and Oswego canals via Albany on the Hudson River. (When the proposed St. Lawrence seaway is constructed, the ocean-going ships will be able to sail from the Atlantic Ocean direct to Port Arthur and Fort William).

On the Great Lakes, and through the canals and deepened channels connecting the Lakes, today large freighters carrying grain and other products can sail. These large freighters, however, cannot pass through the six small canals along the St. Lawrence River between Lake Ontario and Montreal. It is necessary, therefore, to transfer grain at the eastern end of Lake Ontario to smaller boats, which can proceed to Montreal where the grain is then transferred to ocean-going ships bound for overseas ports. At certain points, then, "transfer" elevators are required through which grain is transferred from large freighters to smaller boats.

In addition to these large transfer elevators there are also a number of elevators built on the eastern part of Lake Huron, principally in the Georgian Bay, into which grain is unloaded to be transferred to railroads to serve the domestic needs of the large farming areas in Ontario.

At times these Georgian Bay elevators are also used to transfer grain from large to smaller freighters, and in times of heavy prairie crops these elevators are also used for storage purposes. It is interesting, too, to note that when storage space is scarce, even the large freighters and canallers themselves are used to store grain during the winter.

At Halifax, Nova Scotia and St. Johns, N.B., which are ice-free ports, there are also large storage and transfer elevators, which are filled with grain by train from Georgian Bay elevators or from Montreal, and sometimes direct by rail from Fort William and Port Arthur, so that grain can be shipped directly overseas by ocean-going vessels when the St. Lawrence is frozen.

Altogether, then, it will be seen that there is a considerable choice in the size and type of lake boats used, and the number of transfers the grain can undergo, and the different ocean ports to which it can be shipped, all depending on circumstances which may vary greatly from year to year. In short, it can be said that at different times of the year the ocean ports of Montreal, Quebec, Halifax and St. John in Canada, and in the United States, Portland, Boston, New York, Philadelphia and Baltimore, are all available to receive and ship Canadian grain overseas, although, of course, the bulk of our grain flows, during the eight months of open navigation, to overseas ports and mills via Montreal and Quebec on the lower St. Lawrence River.

Many of the large bulk freighters carry some 615,000 bushels of grain, and a new boat is under construction that will carry no less than 750,000 bushels. The smaller "canallers" carry from 80,000 to 90,000 bushels of grain.

East of Fort William and Port Arthur there are no less than thirty large transfer and storage terminal elevators, with a total storage capacity of 85 million bushels. This includes 18 elevators in Ontario, with a storage capacity of 56 million, 8 in Quebec — Montreal, Quebec City and nearby — with a storage capacity of 25 million, and 4 in New Brunswick on the Atlantic — at St. John and Halifax, — with a total storage capacity of just over 5 million bushels. Adding to these the 30 terminals at Fort William and Port Arthur gives us a total of 60 terminals with a total storage capacity of 178 million bushels in Canada from and including Fort William and Port Arthur to the Atlantic Ocean.

Noting the increase in numbers and capacity of these steamships, and terminal elevators, it will be seen at once that it has all well kept pace with the remarkable increase in the production of grain in the West. No small tribute, indeed, to everyone concerned in the vessel and elevator business, including Governments, Railways and Private Companies.

The magnitude of it all will be grasped when it is noted that there is today a greater traffic of ships passing through the Soo Locks and canals between Lake Superior and Lake Huron in eight months than there is through both the Suez and Panama canals combined in twelve months.

This great parade of lake ships, steadily keeping pace and time like a well-ordered procession, is all the more remarkable when it is realized that the most violent and sudden storms can arise on the Great Lakes, which require the highest judgment and navigating skill to avoid disaster, and that many and many a good freighter with all hands has perished in these dangerous waters. Prairie farmers, then, can well raise a gauntlet in salute as a tribute to the high courage and skill of the officers and crews of these freighter ships, which transport prairie grain across the lakes to the markets of the world.

Chapter Fifteen

West Coast, Churchill and Interior Elevators

IN 1914 the Panama Canal was opened, and it was thought that much grain could be forwarded to the markets of the world from the west coast of Canada via the Panama Canal. So the Dominion Government, in 1916, constructed a terminal elevator at Vancouver, with a capacity of 1,266,000 bushels. In order to test the new route to Europe, in the fall of 1917 a shipment of

100,000 bushels of Alberta wheat was forwarded to Vancouver and loaded on to an American freighter, "The War Viceroy", destined to the United Kingdom.

The cargo suffered no deterioration, thus establishing the practicability of the route through the Panama Canal. But ocean freight rates were found to be too high to warrant further shipments.

During the next five years some grain was shipped from Vancouver to the Orient, but in 1921 the shipping rates from Vancouver began to fall, and from that time on increasing quantities of grain have been shipped via the Panama Canal to Europe and to Asia via west coast ports.

The records of the Vancouver Grain Exchange, however, reveal some earlier shipments. In March, 1900, 50,000 bushels of sacked wheat were shipped from Vancouver on the French steamer "Admiral Dupere", to Liverpool, via Cape Horn, and in the same year 50,000 bushels were sent to China, and in 1910 19,400 tons to Mexico.

In 1922 exports of grain from Vancouver amounted to over 14 million bushels, of which 10 million were shipped to the United Kingdom. In 1953, a record of 121 million bushels of wheat, oats and barley were shipped from Pacific Seaboard Terminals — Vancouver, New Westminster, Prince Rupert and Victoria — to Europe and Asia, plus considerable quantities of flour to Asia (which in 1952 were the equivalent of 12 million bushels of wheat), all compared with a total of 458 million bushels of grain shipped to world markets eastward via the Great Lakes.

There are now seven terminal elevators at Vancouver, one in New Westminster on the Fraser River, one at Victoria on Vancouver Island, and one at Prince Rupert, with a total capacity of 28 million bushels. In addition, there are private mill elevators with a capacity of 1,290,110 bushels.

In 1928 a terminal elevator was built at New Westminster on the Fraser River, with a capacity of 750,000 bushels, which now competes actively with Vancouver for shipments of grain to both Europe and the Orient. This elevator is leased by a private grain company. A private company, in 1928, built an elevator at Victoria, with a capacity of one million bushels. Today this is owned by a grain firm specializing mainly in the shipment of barley to the Orient, and of seed to supply the surrounding agricultural area.

After the Grand Trunk was completed, with a terminal at Prince Rupert, it was hoped that much grain would flow through this port to the Orient, for it is 480 miles nearer to Asia than is

Vancouver. In 1925 a terminal elevator was erected by the Dominion Government with a capacity of 1,250,000 bushels. This is today operated by the Canadian Government Elevators.

Besides these terminal elevators on the Pacific Coast, there are today five public terminal interior elevators on the prairies situated respectively at Moose Jaw, Saskatoon, Calgary, Edmonton and Lethbridge, with a total capacity of 17,100,000 bushels. These elevators were built between 1914 and 1917 by the Dominion Government, partly to have some reserve storage in times of emergency and partly to provide storage and inspection facilities for grain destined for Pacific Coast shipments through the Panama Canal and later by the Hudson Bay route. The Government considered these elevators would help to make these new routes successful.

The first farm organization of the West — the Manitoba and Northwest Farmers' Union — in December 1883 assembled in Winnipeg and demanded in its "Declaration of Rights" — "The immediate construction of the Hudson Bay Railway" for the shipment of grain overseas. Successive farm organizations continually reiterated this demand.

It was not, however, until 1929, after much hesitation, that the railway finally reached Churchill, where an elevator was constructed in 1930.

In September, 1931, a trial shipment of grain left Churchill on two tramp steamers, the "Farnworth" and the "Walkworth", loaded with around 270,000 bushels of wheat each. The "Farnworth" arrived in London, England, after sixteen days and the "Walkworth" arrived at Antwerp after twenty-two days. Churchill brings the prairies 1,200 miles nearer to Liverpool than the Fort William and St. Lawrence route, but the port faces serious difficulties. The frost-free sailing season is short — between sixty and ninety days only. Owing to the depth of the frozen ground, it is difficult to supply the necessities and amenities of a town at Churchill. The number of ships that can call there is governed by the amount of freight that the West will absorb out of the port of Churchill. Time alone will reveal whether Churchill can overcome these disabilities.

For the crop year 1952, 8.6 million bushels of wheat were shipped out of the port of Churchill.

These Western and Interior elevators, numbering 80 (including many small mill elevators), have a storage capacity of 53 million bushels, so making a total of 140 terminals in Canada with a capacity of 232 million bushels. Adding country elevators to this total gives a grand total of 5,543 elevators of all kinds, with a total storage capacity, for 1952-53, of 540 million bushels.

Chapter Sixteen

Progress of Farm Population and Grain Production

BY 1886, as we have already seen, the stage was all set for a vast increase of settlers to arrive in Western Canada. Peace had come to the land. The country was being well served with main and branch railways. The land could grow abundant wheat and other crops. Cheap transportation to the markets of the world was assured. Millers from many countries were eagerly demanding high quality prairie wheat. Country elevators and terminals had been built and merchants were moving grain from producers to consumers efficiently and at low cost. The homestead system enabled any man to start farming with very little capital. The West was the last large area of fertile land in the world available for settlement. Immigrants were welcomed and they poured in.

The story is revealed in detail by the statistics, which show the growing population of the West, but we must remember that these cold statistics represented homemakers from many different countries — young, enthusiastic, full of initiative and enterprise — anxious to start a new life in a new country and all with hopes and aspirations to make a success of their venture. Some had capital but the majority had little or none.

Keeping this in mind we can observe what the statistics reveal. In 1881, just before the Canadian Pacific Railway went through, there were 122,400 people, including Indians, in the area that is now called Alberta, Saskatchewan and Manitoba. This included 59,185 whites and part Indians called Metis, in Manitoba, and only 6,974 whites and Metis in Saskatchewan and Alberta combined.

By 1891, in ten years, the population had doubled to a total of 251,473 people. The records show that population in each of the three prairie provinces steadily increased until the year 1951, when the census showed there were in the three provinces some 2,548,000 people. (776,000 in Manitoba, 832,000 in Saskatchewan, and 940,000 in Alberta).

The farm population, however, shows a different picture. In 1901 the total farm population was 317,000, representing 75.5% of the total population of 420,000. In 1936 the farm population of the three prairie provinces was at the peak of 1,235,000 and represented 51.1% of the total population of 2,416,000. The farm population, however, has steadily declined year by year from 1936 until the 1951 census showed the three prairie provinces had only 953,000 people living on farms, representing 37.3% of the total of 2,548,000.

In 1881 there was a total of 9,077 farms in the whole of the West. The peak of the number of farms was reached in 1936, when the records show Manitoba had 57,774, Saskatchewan 142,391,

and Alberta 100,358, or a total of 300,523 farms. The decline in the number of farms then started, and the 1951 census reveals that there was a total of only 248,716 farms in the three prairie provinces — 52,383 in Manitoba, 112,018 in Saskatchewan and 84,315 in Alberta.

In spite of this decrease in farm population and in the number of farms, it is most interesting indeed to observe that the number of acres sown to crops including cultivated summerfallow, has not decreased but on the contrary has steadily increased throughout the years. The figures are as follows: In 1901, 4,261,100 acres sown and in summerfallow; in 1936, 57,049,000 acres, and in 1951, 66,997,000 acres. (45,428,000 seeded and 21,569,000 summer-fallowed.)

This all means that since 1936 fewer people have worked more land, which further means that farming in Western Canada has been conducted with still greater efficiency, and that, in consequence, a number of people have been able to leave farms and take employment in other industries without decreasing agricultural production.

Two conditions must be present in any country to permit people to leave the farms and to have at the same time more and more acres in cultivation. The first is that large-scale labour-saving farm machinery must be available to enable one to take care of more acres, and the second is that other industries must be present that can give employment to people who leave the farms. Whenever these two conditions are present anywhere in the world the farm population has declined, and it is probable that in Western Canada farming population will decline still further for at least some time to come.

The first condition is present in many countries in the world, for labour-saving farm machinery is available everywhere as soon as people can afford to purchase it. The second condition, that there are sufficient industries to give employment to farm people, is not present today in such countries as China, Japan, India and other places, and so it is of no advantage to those countries to introduce much labour-saving machinery, for there would be no employment for those who left the farms. How fortunate, then, has been Western Canada that these two basic conditions, to permit of greater efficiency in farming, have developed steadily hand in hand.

Some may deplore the decline in farm population in the West. We have to remember, however, that farm people in the West still represent 37.3% of the total population, though for the whole of Canada people on farms represent only 20.2% of the total population. Western Canada, therefore, still has relatively more people on farms than the average of the whole of Canada. Ontario has only 14.7% engaged in farming, and Quebec 18.9%. Prince Edward Island, with 47.5% alone has a larger percentage on farms than Western Canada.

Progress can also be estimated in terms of grain production.

In 1878 the Province of Manitoba, which then constituted the whole agricultural West, produced a million bushels of wheat — actually 1,100,000 bushels. By 1885, when the Canadian Pacific Railway had gone through to the West, Manitoba produced 7.4 million bushels, and the North West Territories, now Alberta and Saskatchewan, produced 1.1 million bushels, or a total for the whole of the West in 1885 of 8.5 million bushels. 1900 was a bad drought year, the average yield, both for Manitoba and the prairies, being only 9.1 bushels to the acre, but the next year Manitoba produced 50.5 million bushels and Alberta and Saskatchewan combined 12.7 million bushels, or a total of 63.2 million bushels.

By 1909 Saskatchewan produced for the first time more wheat than Manitoba and by 1916 Alberta also produced more than Manitoba. The three provinces together in 1906 produced for the first time over 100 million bushels of wheat, the exact figure being 102.2 million bushels. By 1911 for the first time the prairies produced over 200 million bushels, the exact figure being 208.7 million from 10 million acres, a record up to that time also in acreage.

1915 was one of the highest yields per acre ever harvested on the prairies, with an average of 26 bushels to the acre, and for the first time the prairies produced over 300 million bushels, the exact figure being 360 million from an acreage of 13.8 million acres. In 1923 for the first time the prairies produced over 400 million, the exact figure being 452 million from an acreage of 21 million acres. The next record year was in 1928, when the prairies for the first time produced over 500 million bushels, the exact figure being 544 million from 23 million acres, a yield of 23.5 bushels to the acre. The highest production up to this present time was in 1952, when the prairies produced 664 million bushels from 25 million acres, a yield of 26.3 bushels to the acre. In 1953 the prairies almost repeated this remarkable performance, with a yield of 564 million bushels from 24.6 million acres, a yield of 22.9 bushels to the acre.

Barley shows much the same kind of progress. Starting with 1.3 million bushels for the three prairie provinces in 1885 it rose to 53.6 million in 1922, and for the first time to over 100 million in 1928, the figure being 112.7 million bushels. It then went to over 200 million in 1942, the figure being 241 million, with 37.6 bushels to the acre on 6.4 million acres. The peak of barley production was in 1952 with 281 million bushels, or 34.5 bushels to the acre with an acreage of 8.1 million. The highest acreage in barley was registered in 1953, with 8.6 million acres, which gave a yield of 30.5 bushels to the acre, or 262 million bushels.

Oats show a different picture. The total production of oats for the three prairie provinces in 1880 was 1.3 million bushels. In 1909, with a yield of 45.7 bushels to the acre, production was 185

million bushels. By 1911 production was 226 million, and in 1916 for the first time it was over 300 million, the exact figure being 314 million. In 1942 oats reached the phenomenal production of 500 million bushels from 9.7 million acres, with an all-time record yield of 51.7 bushels to the acre. Acreage and production in oats has steadily declined since 1943 with 11.8 million acres, to 1953, when 6.5 million acres gave a production of 273 million bushels.

Much of the decline in oat acreage is attributable to the replacing of horses by tractors and power-driven machinery, which require oil as a fuel instead of the oats farmers used to grow for their horses. Because this displacement of horses by machinery is still going on, there is no reason to suppose that the trend of declining oat acreage will not to some extent continue.

The increase in barley and wheat acreage will, of course, depend on world demand. Because, however, the population of the world in general is growing faster than is the production of food-stuffs, it would seem that over a term of years the demands for wheat and barley, unlike oats, should tend to increase.

The total production for 73 years in the prairie provinces of wheat has been 15,668 million bushels; for oats 11,875 million; and barley 4,263 million, or a total production of wheat, oats and barley together of 31,806 million bushels. In addition, there have been many millions of bushels of rye and flax produced. It will be noted that the oats and barley together almost exactly equal the production of wheat.

When we consider that the greater part of this wheat, and a good part of the barley and oats, and much livestock fed with oats and barley, have been exported out of Canada, it will be observed that our prairie farmers have made a most valuable contribution, since grain production started on these prairies, to the feeding of the hungry people of the world.

Chapter Seventeen

Yield Per Acre and Soil Fertility

THE PRODUCTION of any crop is governed, over a term of years, by the number of acres seeded, but production in individual years is governed by the yield per acre.

Yields per acre for the past seventy-three years show considerable differences in different years. For instance, the highest yield for wheat, average of the three prairie provinces, was in 1887 with 26.5 bushels to the acre. Next highest — 65 years later — was in 1952, with almost the same figure — 26.3 bushels to the acre. The lowest yield for the three provinces was in 1937, with 6.4 bushels to the acre. The highest wheat yield registered

in an individual province was Alberta in 1915 with 31.1 bushels to the acre. The lowest wheat yield in any individual province was in Saskatchewan in 1937 with 2.6 bushels to the acre.

With oats the highest yield, average of the three provinces, was in 1942 with 51.7 bushels to the acre. The lowest yield for oats in the three provinces was in 1889 with 15.6 bushels to the acre. The highest yield per acre registered for oats in any individual province was in Alberta in 1942 with 53.3 bushels to the acre. The lowest yield was in Saskatchewan for the year 1937 with 5.1 bushels to the acre.

With barley, for the three provinces, the highest yield per acre was in 1942 with 37.6 bushels to the acre. The lowest yield per acre was in 1889 with 13.1 bushels to the acre.

The highest yield per acre registered for barley in any individual province was in Alberta in the year 1942 with 39 bushels to the acre. The lowest yield was in Saskatchewan in the year 1937, with 4.7 bushels to the acre.

There are great differences indeed in yields per acre, which are accounted for mainly by differences in rainfall.

It is found that there is a good relationship between total rainfall and yield per acre with any of the grain crops. At one time it was thought that the total precipitation for the whole year governed the yield, but it was later found that snowfall had but little influence on the crop, for the reason that usually early in November the ground freezes, then the snow falls and evaporates into the air and melts and runs away while the ground is still frozen, so that little of the moisture contained in the snow penetrates into the ground to serve the coming crop. If, however, one takes the rains which occur in the fall months of August, September and October, which rains are usually held in the ground after harvest and on until spring, and adds this fall moisture to the summer rains that occur between April 1st and August 1st, then the result gives a figure which in most years bears a close relationship to the yield per acre.

Western Canada is officially classed as a semi-arid area — that is, it is subject from time to time to droughts as the following records of yields per acre reveal.

If we take the last thirty-seven years out of the seventy-three recorded, that is, from 1953 back to 1917 inclusive, we find that the average wheat yield has been 15.7 bushels to the acre. Taking similarly the thirty-six years from 1916 back to 1880, then we find that the average yield was 19.2 bushels to the acre. Some believe that this is accounted for by a gradual loss over the years in the fertility of the soil. There is, however, another explanation, which is in the different amounts of rains that fell during these respective periods.

The Searle Grain Company has accumulated rainfall data for each year and for each province from 1885 to date. It is found that for the most recent thirty-six years, — from 1953 back to 1917 — the annual rainfall has averaged 11.54 inches, but that for the first series of years, that is from 1916 back to 1885, the average annual rainfall was 12.65 inches, which most probably accounts for the difference in yields per acre for the two separate long periods.

Observing the rainfall in greater detail it is found that for the period 1885 to 1916 there were five semi-drought years; that is, with rainfall of less than 10 inches. These were 1886, 1889, 1900, 1907, and 1910. For the most recent series of thirty-seven years, however, that is, from 1953 back to 1917, it is found that there had been no less than ten of these semi-drought years — 1918, 1919, 1924, 1929, 1930, 1931, 1936, 1937, 1945 and 1949. All it seems that one can say with certainty, then, is that in the most recent period of thirty-seven years there have been more semi-drought years than occurred in the earlier thirty-six years.

That the fertility of the soil in the West in general has not been seriously impaired seems to be shown further by the fact that for the last three crops — 1951, 1952 and 1953 — yields have been in each year over 20 bushels to the acre, giving an average of 23.6 bushels. Since grain growing started on the prairies there has been no other period of three years running where the average yield for three years in succession was as high.

The longtime average yield for the three prairie provinces over seventy-three years has been for wheat, 16.2 bushels to the acre; for oats, 30.9 bushels to the acre; and for barley, 24.3 bushels to the acre.

Attention has been drawn to the variation in yields per acre of wheat, oats and barley in different years — yields of wheat, for instance, varying from 31.1 bushels to the acre in Alberta in 1915 to 2.6 bushels to the acre in Saskatchewan in 1937, and in different years with yields per acre that fall in between these two extremes.

It has been shown, too, that variations in rainfall are the prime cause of these variations in yield per acre. It is true, of course, that in some years other factors contribute to low yields, such as stem rust which now and again has taken a serious toll of a generous crop that had been produced by good rainfall but which, alas, was damaged to the extent that but little could be harvested. Details of these losses from rust in different years will be given later.

It is, however, variations in rainfall that constitute the chief reason for variations in production, coupled, of course, with the number of acres sown. Large areas of our prairie provinces are

officially classed as semi-arid, which means that seldom do they receive all the rain that the growing crop could use. It has not been unknown, in fairly large districts, in years of very good rainfall, for wheat yields to be recorded up to 60 bushels to the acre, compared with the longtime average wheat yield for the prairies of 16.21. For oats, records have shown 120 bushels to the acre and for barley 80 bushels to the acre, which indicates that if the West enjoyed the same higher rainfall that occurs in Eastern Canada, or in Europe, that the average yields per acre of all grains in the West might easily be double the present yearly average.

Everyone, of course, realizes the importance of rainfall and the serious harm any lack of it brings to prairie farmers. That is why we sometimes hear of groups of farmers in certain drought areas subscribing money to support rain-making projects. But rainfall varies greatly year by year, province by province, and even in different areas within each province. The longtime average fall and summer rains together for the three prairie provinces for sixty-eight years — that is, from 1885 to date, has been 12.05 inches. The highest annual rainfall ever recorded for the three provinces combined was 21.06 inches in 1901, and the lowest was 7.96 inches in 1929. For individual provinces the highest rainfall recorded was in Manitoba in the year 1901 of 21.93 inches and the lowest in Alberta in the year 1910 of 6.86 inches.

So the records of these prairies reveal there have been some years of abundant rainfall and some years of low rainfall. There appears, however, to be no rhythm in the occurrence of high or low rainfall that would allow of predictions to be made for the future. All we can say is that these variations in rainfall have occurred, so we may be sure there will be in the future again some years of good rainfall, when high yields can be expected, and equally well some drought years, giving low yields to the acre.

Semi-drought years usually appear one at a time in the midst of a series of good rainfall years, and occasionally there have been two drought years running, but in Saskatchewan there have been three different periods, in each of which periods three years in succession were recorded with considerably less than average rainfall, namely, 1917, 1918 and 1919; then 1929, 1930, and 1931, and later 1936, 1937 and 1938. All these semi-drought years resulted in considerably less than average yields to the acre.

From this it would appear that at some time or another in the future one or more drought years will again occasionally appear. The wise farmer, therefore, anticipating this, should set aside in each of the good years some seed and some feed, and particularly some money savings in the bank, to tide him over the semi-drought year or years that sooner or later are bound to occur again.

Summerfallowing is widely practised to offset somewhat the bad effect of drought. The effectiveness of summerfallow, as has already been mentioned, was discovered in Western Canada in the year 1886 at the Bell Farm near Indian Head. Summerfallow conserves an extra year's moisture so that in a drought year a crop is still worth harvesting that otherwise might not be. Summerfallowing is in wide use in Western Canada where, on the average, one-third of all the land under cultivation is usually summerfallowed each year. Contrary to general belief, summerfallowing does not appear to increase significantly the longtime average yield compared with sowing each year on stubble land, as longtime experiments at the University of Alberta and at the Experimental Farm at Lethbridge have demonstrated. Summerfallowing, however, does help to control weeds, and certainly spreads out the annual farm work to a better extent. It also saves one half of the seed needed to sow a crop each year on stubble land. The prime benefit of summerfallow is, however, that whenever there is a bad drought, so that the crop on stubble is hardly worth harvesting, there will certainly be double the yields on summerfallow, which makes harvesting worthwhile.

At all events, farmers must themselves have found some virtue in summerfallowing, otherwise around 20 million acres out of 60 million total cultivated would not now be in summerfallow.

Chapter Eighteen

Exports of Grain to World-wide Markets

THE GREAT INCREASE of acreage brought into cultivation, and of production and of population that occurred in the West has been shown. We now deal with an important feature which really enabled all this progress to be made, that is, the exportation abroad of our grain, in short, the opening up of world-wide markets, for without these markets such increases of exportation, production, cultivation or of population would not have been possible.

Dr. D. A. McGibbon, in his authoritative work, "The Canadian Grain Trade," 1932, deals at considerable length with the export of wheat and wheat flour, and of peas and of barley and of oats from Eastern Canada for as far back as the year 1745. These exports were comparatively small — around the order of 200,000 bushels of wheat and about 15,000 barrels of flour a year, with a few thousand bushels of peas and barley and oats, — but they were, while small in quantity, Dr. McGibbon tells us, of considerable importance to the pioneer settlers of those days in Eastern Canada.

Meanwhile, Rupert's Land (Western Canada), from the days of the Selkirk Settlers in 1812 and for long before that around the

Fur Trading Posts of Rupert's Land, had been growing grain, but up to around 1882 production just barely sufficed to provide sufficient foodstuffs for the people of Manitoba and the North West Territories. In 1883, however, a surplus of wheat appeared for the first time, and the farmers began to complain, as we have already shown, about insufficient markets.

The records tell us that the very first shipment of Canadian wheat from the West was on October 13, 1876. It consisted of 857 1/6 bushels of Red Fife, purchased by the eastern Seed House of Steele Briggs Company, Toronto, for use as seed in Eastern Canada. (Steele Briggs tried to buy 5,000 bushels).

Another small shipment was made to Britain on October 17th, 1877, by way of the Red River from Winnipeg to St. Paul, thence to Britain. In 1884, after the C.P.R. had connected the West directly with the East and with world markets, a shipment of 1,000 bushels (sacked) of the new Manitoba No. 1 Hard was sent to Glasgow, and landed there exactly twenty-one days from the time it left Brandon. This was the start of the all-Canadian export grain route.

By this time it became apparent that the West could grow extremely high quality wheat provided the variety Red Fife was used. (Incidentally, there was insufficient Red Fife seed in Manitoba, so from time to time quite large quantities of Red Fife seed were imported into Manitoba from Minnesota. In 1883, 10,000 bushels were brought in to displace older and low quality varieties).

It is probable that it was this shipment of Red Fife, in 1884, which really established the high quality of prairie wheat. From this date on small prairie export shipments were made. From 1890, however, growing exports from the prairies exceeded exports from Eastern Canada, and from that date to the present the exports of Eastern Canadian wheat have been but microscopic compared with the vast quantities produced and exported from the prairies.

Prairie wheat, under the title of "Manitobas", was first quoted on the Liverpool Grain Exchange on November 9th, 1892. These quotations of "Manitobas" from Western Canada on the world's greatest grain market at Liverpool finally set a seal of high quality on prairie wheat for the whole world to see.

In 1883, Eastern Canada exported 7.5 million bushels of wheat and flour combined; none from Western Canada. In 1884, however, the total exports from the whole of Canada was 1.5 million, but which included 1,000 bushels from Western Canada. By 1899 exports of wheat and flour amounted to 12.7 million; by 1908 to 56.7 million; and for the first time exports exceeded 100 million in 1912, the exact figure being 115,744,172. In 1915, the year of

one of Canada's largest crops, exports amounted to 269 million bushels and surpassed 300 million in 1923, when the exact figure was 346,521,000. In 1928, exports exceeded 400 million bushels, the exact figure being 407,564,000, an all-time high for wheat exports which has never been exceeded to this day.

In the early days, around 1900, wheat and wheat flour was exported to about a dozen different countries, including South Africa, the West Indies, Newfoundland, Belgium, France, Germany, Holland, Italy, Mexico and the United States, whereas in the crop of 1952-1953 wheat and wheat flour was exported to a total of eighty-five different countries; illustrating the world-wide demand for high quality Canadian wheat and flour.

Exports of oats and barley have also gone along at a good pace. By 1900, exports of oats amounted to around 7 million bushels and barley to 2 million bushels. By 1944 oats exports amounted to 85 million (the highest yet), and in 1953, barley to the outstanding figure of 118 million (the highest yet).

Important reasons for this world-wide demand, hence the exports of these grains, is first the high quality that comes from the use of the right varieties, and second, by marketing methods and the constant exploration of world markets as practiced by long-experienced and highly skilled grain merchants including exporters and importers.

Exports of wheat and flour from 1880 to date total 10,071 million bushels; oats 1,333 million and barley 925 million.

Tables in the appendices show the exports of wheat and flour, of barley and of oats each year from 1880 to date.

Chapter Nineteen

Farmers' Discontents and Farm Organizations

SINCE AGRICULTURE started in the West, farmers from time to time have become extremely discontented. These discontents usually resulted in farmers banding together to set up an organization, so that by their combined efforts they would be able to bring pressure on Governments or on others to alleviate their troubles and to cure their grievances.

There have been many reasons why farmers have felt "they were not getting proper justice", as was so often said. These discontents have been the result primarily of several features, the most important of which springs from the fact that large parts of Western Canada ever have been, and still are today, semi-arid areas, in which yields per acre, hence production, in spite of any efforts that farmers can put forth, vary greatly. When yields are

extremely low, then hardship and suffering are visited on farmers. There have been, too, from time to time, plagues of grasshoppers and other insects, of rust and of other plant diseases, late spring and early fall frosts, and always, to a minor extent, hail, which visitations have severally, or combined, at times deprived farmers of much of the fruits of their strenuous farming efforts.

Western farm products from the earliest days have had to be exported out of Canada to far-off countries of the world. Producers, therefore, have always been subject to the far-off consumers' likes and dislikes, and to prices registered on world markets. Western prairie farm grains, moreover, had to meet the competition on world markets, not only of grains offered by other export countries, but also of foodstuffs that could be substituted for Canadian grains, all of which results in fluctuating prices.

While farmers could see with their own eyes that Nature had been the cause of fluctuations in production, yet they were not always aware, being so far from international markets, of the complicated international factors that brought about fluctuating prices.

Almost all prairie farm organizations have also believed in one important principle of trade, namely, "lower tariffs on the things farmers had to buy for their living and production" so that their costs of production could be reduced. Farmers have always complained that they had to sell their farm products on unprotected world markets but had to buy the goods and materials they needed on a protected, hence high cost, Canadian market. This has been expressed as follows: "It was necessary for Western farmers to organize to protect their interests against the overpowering influence of the industrialized East."

At times farmers have criticized the method by which grain was handled on country markets — its weighing, the amount of dockage taken, the grades given, and the difference in prices between country elevator and terminal markets such as Fort William and Port Arthur. Farmers, too, demanded facilities at each country point so that they could, if necessary, load their own cars and ship their own grain to terminal markets without having to use the facilities of country elevators.

The very earliest settlers feared for the security of tenure over the land they occupied. They feared that the new Canadian Government (in 1870) might change the rules and dispossess them of their farms.

As we shall see later, some prairie organizations, finding it difficult at times to persuade governments to take the actions farmers thought were necessary in their interests, decided on political action. Once, indeed, in the early days, they contemplated armed revolt against the Government.

The first prairie organizations were born out of the Canadian prairie settlers of those days. In somewhat later years there was a considerable so-called "American invasion" of U.S.A. farmers who, because of the high price of land in the United States, sought the cheaper land in Western Canada. Some of these farmers had had considerable experience with farm organizations in their own country — the "Nonpartisan League," "The Grange", "The Society of Equity," "The Farmers' Alliance" and others. Many of these farmers had previously brought to the United States from Europe their own agrarian discontents and an urge to organize for their own protection.

The agricultural political experience of the U.S. immigrants had a profound effect on turning the views of prairie farmers towards politics. The Americans from the Middle West brought with them demands for prohibition, direct legislation, the single tax, the recall of public officials, direct primaries, woman suffrage, free trade and proportional representation, etc. Their slogan was "Organize! Organize!" The farmers of the prairie West welcomed these proposals and to a greater or lesser extent embodied them in their own organizations that were set up from time to time.

It is well to remember here that the whole industry of grain production and marketing was entirely new in Western Canada. There was but little precedent to go by. Almost everyone had to learn his new job, and this included not only farmers but those engaged in the handling, processing and marketing of grain.

Those early and inexperienced grain merchants, too, found it difficult to arrive at proper prices. They were far from markets and they did not have the advantage of an open "futures" market, that would give them "hedging" or price protection. Is it any wonder, then, that errors were made by all and that farmers now and again would feel that they were being discriminated against?

The very first farmers' movement in Western Canada was in 1869 and concerned the grievances, discontents and fears of the Metis farmers of Manitoba that when Britain surrendered Rupert's Land (for long owned by the Hudson's Bay Company) to Canada that the Metis might, under the proposed new Canadian Homestead Laws, be deprived of their lands which they had so long occupied, and deprived, too, of the rights and privileges they had for so long enjoyed under the Hudson's Bay Company's regime.

These discontents arose during the interval between March 19th, 1869, when the Hudson's Bay Company surrendered their lands to Britain, and for almost a year following, before Canada, on July 15th, 1870, took the lands over from Britain, and during which interval, in fact, Western Canada belonged to Great Britain and not to Canada. The Metis were driven to take political action under Louis Riel, as has already been described in an earlier chapter.

The next farm movement of which we have any record was in 1882, when the white settlers formed the Manitoba and North West Farmers' Union, to protect their interests against, as they alleged, "the ascendancy of the big financial interests — the excessive charges of a railway monopoly — and an oppressive tariff which, however beneficial it may be to the manufacturing Eastern provinces, cannot fail to be inimical to the interests of a purely agricultural country such as this." The Union further demanded "the immediate construction of the Hudson Bay Railway."

At its first convention at Brandon, on November 26th, 1883, this convention of farmers drew up a "Declaration of Rights." The Declaration was confirmed later at Winnipeg, in December, 1883. The original aims of this organization, as were set out in pamphlet form and widely distributed, were as follows:—

"We have hopefully faced the hardships of isolation and of a vigorous climate and have been and are still willing to contend manfully with the natural disadvantages of our new location. Now, however, that we have, for the first time, a surplus of grain, we have discovered that the prices we obtain are not sufficient to cover the cost of production and that we are face to face with the fact that notwithstanding all our labour and outlay, we can barely subsist.

"No doubt a combination of unfavourable circumstances, such as early and severe frosts, together with imperfect arrangements for saving and marketing grain, have this season aggravated the farmer's condition and contributed to his discontent. Yet the fact remains that those of us whose crops were untouched by frost and who were at the same time most conveniently situated as to markets, realized little or no profit on our produce."

By 1884 it is recorded that revolt against the policies of the Dominion Government, as faced by the Farmers' Union, was general throughout Manitoba, and extremists of the Farmers' Union were in favour of declaring the independence of Manitoba, and some of them even sketched a scheme for the entrance of the region into the United States as a state. Some extreme members of the Farmers' Union, it is recorded, even contemplated armed revolt; this is shown by a letter to Sir John MacDonald from "one of his thoroughly trustworthy correspondents at Brandon," who attributed "the foundation of the 1886 Rebellion to the Farmers' Union."

Arthur S. Morton, the eminent historian of the West, in his "History of Prairie Settlement," on page 95 remarks as follows:

"The radicalism of the Union, its apparent readiness to resort to secession and even violence, and finally, the outbreak and failure of the Riel Rebellion brought the first attempt of the farmers of

the prairies to organize themselves in self-defence, into discredit. The Unions, in their inception a foreign institution, passed away without any positive achievement in the organization of the agriculture of the West."

Looking back at this early Farmers' Union from the vantage point of today makes one regret that the actions of a few extremists in the Union led to its discredit and abandonment, for one cannot read the original aims of these farmers, as set forth here, without feeling that they were dealing truly with the very basic difficulties that all farmers have faced since that time, and even today still face in this semi-arid Western Canada, situated so far from world markets. The fight, however, for the prairie farmers' right, was continued by the **Manitoba Free Press**, and we find in its issue of September 8th, 1887, these words:

"Tariffs are taxing the life out of the farmers and are farcical attempts to set aside the natural laws of trade. Tariffs are a fraud on the farmer producer, therefore tariffs must go."

After the disappearance of the Farmers' Union, new immigrants in great numbers began to pour into the country, many coming from the United States. All this led to a number of attempts on the part of farmers again to organize in order to redress their grievances. One after another there appeared in Western Canada farm movements which were virtually extensions of similar organizations functioning in the United States — "The Grange," or the "Patrons of Industry"; "The Farmers' Alliance"; "The Society of Equity"; and "The Nonpartisan League." Each of these organizations had but a short life.

"The Farmers' Alliance" swept into Western Canada from the U.S.A. and at one time had a membership of 5,000. It ventured into politics, then controversy developed within its ranks and it disappeared.

Next was the American "Grange" or "Patrons of Industry". It appeared that a number of the new prairie settlers from the United States had had experience with, and had been members of, "The Patrons of Industry". Settlers from England, too, brought with them some experience of British Trades Unions and of Co-operative Movements in Britain. "The Patrons of Industry" in Canada soon changed its name to "The Canadian Farmers' Alliance." At the annual meeting at Brandon, on February 24th, 1892, it was stated that the Alliance had over 100 sub-associations.

The Alliance demanded lower customs tariffs, the Hudson Bay Railway, grain elevators and flour mills at suitable localities to be owned and operated by farmers; that provincial banks should offer loans to farmers at 5 per cent and that farmers should be represented on the Government Board which fixed the standards of

grain. A paper, "The Patrons' Advocate", was established and a grain elevator at Boissevain was acquired. A co-operative store for mail order business was opened at Portage la Prairie. The movement rapidly extended throughout Western Canada and by 1895 the Alliance or "The Patrons of Industry", had a membership of 5,000. This organization, too, ventured into politics, dissension developed among the members and this organization also died.

In 1907 "The Society of Equity" extended into the West from the U.S.A. and in 1908 was renamed "The Canadian Society of Equity". "The Canadian Society of Equity" launched a number of co-operative enterprises to build elevators and to underwrite marketing organizations. This all proved disastrous and the whole structure collapsed. As late as 1914 some shareholders were still paying \$7.50 a share to liquidate the Equity's liabilities. This organization was important, however, inasmuch as it supplied experience to some of its leaders who afterwards became prominent in, and led, that organization, so successful for many years, "The United Farmers of Alberta."

Next on the scene came "The Alberta Farmers' Association" and for a time this Association had been strongly competing with "The Canadian Equity." In 1909 these two organizations joined forces to form the much more powerful and longer lasting "United Farmers of Alberta", led at the start by a well-known figure, J. Speakman, and later by Henry Wise Wood.

On February 12th, 1902, "The Territorial Grain Growers' Association" was formed as a result of an indignation meeting called at the instance of W. R. Motherwell and Peter Dayman of Abernethy. This organization concerned itself mainly with the detailed practices of the handling and marketing of grain and of an impartial distribution of cars by railroads. The Grain Growers' Association branched out in each province, and in 1909, a common educational body, "The Canadian Council of Agriculture", was formed.

"The Grain Growers' Association" concerned itself with education and agitation, but different groups of the members separately organized commercial companies to enter the Grain Trade, hence came "The Grain Growers' Grain Company" in 1906, "The Saskatchewan Co-operative Elevator Company" in 1911, and "The Alberta Farmers' Co-operative Elevator Company" in 1913. It is stated that the achievements of this Association, and of its marketing groups, were the result of the wise decision to eschew politics and to confine their aggression to the domain of business and economics. So, it was stated, this Association did much to guide reform into peaceful channels instead of adopting methods of wild revolt. The Association became a training ground for men who later developed into Cabinet Ministers, such as Motherwell,

Dunning and Crerar. These great figures, too, it is noted, helped to bring about better understanding between Eastern and Western Canada.

While these organizations were being set up, discontent in the West mounted rapidly and on December 15th, 1910, what is termed "The Siege of Ottawa" took place, when a delegation of some 500 Western grain growers and 300 Ontario "Grangers", and with smaller groups from Quebec and the Maritime provinces, marched on Ottawa and made certain demands on the Government, i.e., tariff reduction, an increase in British preference, reciprocity with the United States, Federal acquisition and operation of terminal elevators, government construction and operation of a Hudson Bay Railway and terminals, and amendments to the railway and bank acts.

The delegation also complained about alleged manipulation and forged returns by some Elevator Companies. The result of this march was the Grain Bill of 1911, which provided for the setting up of a "Board of Grain Commissioners" to supervise terminal and country elevators, and of the entire business of grain inspection and grain grading. This "Canada Grain Act" has often been spoken of since as being the veritable Magna Charta of the prairie farmers.

During these years of grave discontents, a man who came much in the Western public eye was Mr. E. A. Partridge, of Sintaluta. He was the moving spirit behind the formation of the Farmers' Grain Companies. He is the man who selected Mr. T. A. Crerar, now Senator Crerar, to manage the Grain Growers' Grain Company, and Mr. C. A. Dunning, now the Hon. C. A. Dunning, to manage the Saskatchewan Co-operative Elevator Company.

Mr. Partridge was a most sincere man, of intense vision and abounding energy and was possessed of a fiery zeal to help his fellow farmers. He was deeply disappointed that the winning of the Canada Grain Act and the setting up of grain elevator co-operatives had not solved the underlying farmers' problems, and had not cured their discontents. He conceived the idea, therefore, that the real trouble must rest with the Winnipeg Grain Exchange and its Open Futures Market.

Mr. Partridge conducted a crusade against the Exchange even though he was a member of that body, representing the Grain Growers' Grain Company. The Exchange suspended the Grain Growers' Grain Company from its trading privileges because of the Company's infraction of existing Exchange rules. Mr. Partridge was instrumental in having three separate inquiries into Grain Exchange policies and practices, i.e., a Royal Commission, a Crown Prosecution and a Legislative Hearing.

The charges made by Mr. Partridge against the Exchange were not sustained. On the other hand, it was recommended that the Exchange should modify its rules so that the Grain Growers' Grain Company could resume its membership but stated, in addition, that the Company must henceforth abide by Exchange rules and regulations.

Harold S. Patton, author of the valuable book, "Grain Growers' Co-operation in Western Canada," published in 1928, tells us on page 60: "The concurrent Federal, Provincial and Judicial investigations (in 1907) had on the other hand served to clarify, and to some extent render reasonable in the minds of many other farmers, regulations and practices of the Grain Exchange which had hitherto been merely objects of dark suspicion."

Mr. Partridge resigned from his Presidency of the Grain Growers' Grain Company and from his membership in the Exchange. He then met the fate of many others who have laboured long and ardently in the service of agriculture. He disappeared from the scene, soon to be forgotten.

From this time onward the Co-operative Elevator Companies in Alberta, Saskatchewan and Manitoba adopted the normal practices of handling and marketing grain that had been for long usual with all elevator companies. These three Co-operatives progressed and prospered.

The idea was then conceived of amalgamating these three co-operatives into one large organization. After protracted negotiations, the Grain Growers' Grain Company of Manitoba and the Alberta Co-operative Elevator Company amalgamated. Each came to a voluntary end and began their new career under the title of The United Grain Growers' Limited, which, under able Presidents, and sound-thinking Boards of Directors, has for long commanded the esteem and respect of its members and of all who have had business dealings with the company.

The Saskatchewan Co-operative Elevator Company preferred to stay in business and to operate in friendly competition with other co-operatives and with private elevator companies. This organization also expanded and prospered until after the Wheat Pools were established in 1923-1924, when, after much negotiation, the shareholders of the Saskatchewan Co-operative Elevator Company in August, 1926, sold their entire assets to the Saskatchewan Wheat Pool for the sum of \$11,059,310. So passed out of existence one of the most successful co-operative grain handling companies that prairie farmers had ever developed, to become a part of the much larger Saskatchewan Wheat Pool.

Meanwhile, the farmers' organization, the United Farmers of Alberta (the result of an amalgamation of the Society of Equity

and the Alberta Farmers' Association in January, 1909) was experiencing astonishing success. Its aims and objects were sound and its practices in achieving these objects were quiet and reasonable but none-the-less effective. The organization prospered for years until it decided, in 1921, to enter politics. To the surprise of everyone, this body, led by Henry Wise Wood, easily won the Provincial Election of 1921 and became the Government of Alberta.

As in the past with other organizations, the entering into politics brought grave dissension in its ranks. Finally, at the election of 1935, the United Farmers of Alberta as a Government, were badly defeated and were replaced by the Social Credit Party under Mr. Aberhardt. The remnants of this once great organization, the United Farmers of Alberta, in the year 1950 became a part of the newly-formed Farmers Union of Alberta.

The Farmers' Union of Canada had appeared earlier upon the scene. It was organized at Saskatoon towards the end of 1921 by some of the more radically-minded farmers of that province. Its declared aim was "to organize farmers so that they may be able to fix their own price above costs of production."

The Union passed resolutions favouring the immediate inauguration of a Provincial Wheat Pool and invited Mr. Aaron Sapiro, the California Co-operative marketing expert, to visit Saskatchewan in the interests of Wheat Pool organization. Finally, in July 1926, after a great deal of dissension, the Farmers' Union amalgamated with the Saskatchewan Grain Growers' Association, to be known as the United Farmers of Canada, Saskatchewan Section, Limited. This organization, after a number of ups and downs, was renamed the Farmers' Union of Saskatchewan in 1949, and there were then soon set up similar Unions in Alberta and Manitoba which at this moment of writing are gaining support and strength.

The Canadian Council of Agriculture was set up in Prince Albert in February, 1910, to represent farmers' organizations throughout Canada. After varying fortunes, the Council of Agriculture, in 1940, was renamed the Canadian Federation of Agriculture, to become, in fact, a representative body of the co-operative organizations across Canada.

Chapter Twenty

The Canada Grain Act and the Board of Grain Commissioners

IT HAS BEEN SHOWN HOW, in 1910, a march on Ottawa took place by farmers who were seeking some government help to solve their problems. This march was not without good results.

As a consequence, Parliament set up a Grain Bill, with provision for a Board of Grain Commissioners with wide powers of supervision and control over grain operations at country

elevators and terminals. The Canada Grain Act became law on April 1st, 1912, and it represented a consolidation and general revision of the Manitoba Grain Act and the Grain Inspection Act, which had been in force for a number of years.

The Act also authorized the Government to construct or acquire terminal elevators at the head of the lakes. As a consequence, in 1913, the Government built a terminal at Port Arthur, with a capacity of 3,250,000 bushels. This was to enable the Commissioners to acquire actual experience in the operating of a terminal so as to determine whether the tariff of tolls was excessive.

The fundamental idea of the new Canada Grain Act — since amended from time to time — is that the farmer should be protected against possible fraud or negligence on the part of elevator operators, from exploitation arising from excessive charges for services rendered, and from indirect losses due to the quality of the grain being deteriorated before it reaches the world's markets. It has been described as the Magna Charta of the grain grower. The Act also has benefitted the Grain Trade by establishing a high standard of uniform practices, and so has improved the service the Grain Trade is able to render to farmers.

Dr. D. A. MacGibbon, formerly one of the Commissioners of the Board, in his book, "The Canadian Grain Trade," 1932, pages 381-388, sets out the functions of the Board partly as follows:

The Board, under the Act, has powers to inquire into any matter relating to (a) the grading of any grain, (b) the weighing of any grain, (c) the deductions made from any grain for dockage, (d) any shortage appearing upon the delivery of any grain into or out of any elevator, (e) the unfair or discriminatory operation of any elevator, (f) the deterioration of any grain during storage or treatment, (g) the refusal or neglect of any person to comply with any provision of the Act or any regulation made or license issued pursuant thereto, or (h) any other matter arising out of the performance of the duties of the Board.

The Act itself lays down the broad general principles which are to govern the handling or merchandising of grain, but the regulation of the details of operation is left to the Board.

The services given under the Board include inspection and weighing of the grain at terminal elevators, the operation of six Government-owned terminal elevators, the work of the Dominion Grain Research Laboratory, the collection and tabulation of statistics covering grain handling, the licensing and bonding of all elevators, and the registration and cancellation of warehouse receipts upon the delivery and discharge of grain from terminal elevators. Each branch is under the control of an executive officer, who operates directly under the Board.

Officers of the Board include the Chief Grain Inspector for Canada, the Chief Weighmaster for Canada, the General Manager of the six Canadian Government Terminal Elevators, the head of the Licensing and Bonding Department, a statistician, a chief chemist and a registrar for warehouse receipts. Each man is to be held responsible by the Board for the proper operation of his branch.

The Inspection Department is the one that most farmers soon become acquainted with, for this Department is responsible for: The classification or setting of grades; the committees on grain standards; sampling and inspection; re-inspection; surveys and appeals; official weighing and the tariff of charges. Under the Chief Inspector also is granted the "Canadian Certificate Final" of grade and weights at point of exportation, which is held to be conclusive evidence that the quality and weights contracted for by the buyer have been delivered.

It is worthy of note that so high has been the standard maintained by the Inspection Department and its staffs, that today Canadian grain is bought and sold on the basis of a piece of paper — the Certificate Final — a most valuable feature indeed, that assists in the marketing, sale and delivery of Canadian grain on all export markets in competition with other export grains.

The Chief Chemist is provided with one of the best and most up-to-date cereal laboratories. The Chief Chemist and his staff run continual tests for quality on the grain produced each year in different areas and give scientific advice to the Standards Committees. They also make elaborate and scientific tests to determine the suitability or otherwise for quality of any new variety that is proposed to offer for licensing.

The Board of Grain Commissioners, therefore, with their chief officers and their staffs, control phases of grain from time to time as it is hauled to country elevators until the time it is loaded into a boat, accompanied by the "Canadian Certificate Final" for delivery to the ports of the world. The Board has created confidence in the minds of the farmers — i.e., the producers and the buyers, i.e., the consumers of our grain — to a remarkable extent. The Board has standardized the practices of the Grain Trade so that Elevator and Terminal Grain Companies are able to give better and more satisfactory service to farmers than they could before the introduction of the Canada Grain Act and the setting up of the Board of Grain Commissioners.

Chapter Twenty-one

Services to Farmers

AGRICULTURE IS UNIQUE in the many services of different kinds that are rendered to farmers by Dominion and Provincial Governments, by semi-governmental institutions, and by private business firms and individuals. No other industry in Canada has anything like as many free and valuable services placed at its disposal.

The reason for this is probably because Governments and others realize that the farmer performs that most essential work of producing food for people; that while all services to society are valuable, still, at a pinch, mankind could curtail considerably the use of what today we term luxuries, and, indeed, many necessities, but that no matter whether times are good or bad, each human being must be supplied with a certain amount of food each day or perish.

Then, too, it is no doubt realized that farming or food production in Western Canada particularly is subject to climatic and other hazards that are quite beyond the control of farmers. These considerations, no doubt, have prompted governments and others to allocate funds to assist farmers to improve agriculture in ways that farmers cannot very well do for themselves.

The earliest recognition of the necessity for helping farmers was the setting up of Experimental Farms, to make agricultural experiments and to demonstrate the best methods of farming, the best kinds and breeds of livestock to raise, and the best varieties of grains to grow in different areas, and to examine and test out new ideas and practices.

This was all realized quite early by the Hudson's Bay Company, which set up an Experimental Farm in the year 1830 on the Assiniboine River, about three miles from Fort Garry. This Experimental Farm was set up to try out a new suggested field of exports from the colony; that of rearing sheep and the preparation of tallow or wool, and of growing and processing hemp and flax for the English market. A stallion, which cost £300, was imported to improve the breed of horses and two consignments of Merino sheep were brought from England to improve the breed and the quality of the wool. A flax mill was also set up. After several years the Experimental Farm was closed; the total loss was computed at £3,500.

The next effort was made by the Canadian Pacific Railway Company, in the year 1884, to determine whether the land through which their railroad ran — now Saskatchewan and Alberta — could grow profitable crops. Farms were established at Scranton, Rush Lake, Swift Current, Gull Lake, Maple Creek, Forres, Dunmore,

Stair, Tilley and Gleichen. The land was broken and seeded. The yields of wheat of the ten farms for the year 1884 averaged 22 1/3 bushels to the acre; oats 54 3/4 bushels to the acre; barley 18 bushels to the acre; and peas, 11 bushels to the acre. The highest yield was at Forres, where wheat went 30 5/6 bushels to the acre. Thus, it is stated, the experiment proved, beyond any shadow of doubt, that Western Canada could grow grain with good yields.

In 1886 the Dominion Government established the Dominion Experimental Farm System, centred at Ottawa but with branches throughout Canada. The first Western Farms were established at Indian Head and Brandon, and their first purpose was to assist Dr. William Saunders, the Director, in developing a superior variety of spring wheat for the Canadian West that would be earlier than Red Fife. Success attended these efforts, for by 1909 was produced the famous Marquis wheat, bred by Charles Saunders, the son of Dr. William Saunders.

Since that time Experimental Farms and Stations have been established at a number of other points in the West — at Morden, Brandon, Indian Head, Scott, Swift Current, Melfort, Regina, Lethbridge, Lacombe, Manyberries, Fort Vermilion and Beaverlodge, and with a Pilot Flax Mill at Portage la Prairie.

At these Farms and Stations work is continually going on in the development of new varieties, and in originating and testing new methods of management for the production of field crops, livestock, bees, horticultural products, fibre flax, forage plants, poultry, tobacco, and so forth. These Experimental Farms and Stations attract the attention of farmers, and many demonstrations and lectures are given to different groups throughout the year.

The work of the Experimental Farms and Stations has been of extreme value in developing new practices and methods which tend to improve quality, lower costs of production, and to demonstrate to farmers the value of the use of these up-to-date practices, of the most suitable breeds of livestock and poultry, and of the most suitable varieties of grains, grasses, clovers, and of trees, plants and bushes.

In addition to Experimental Farms and Stations there have been set up across Canada no less than 234 Dominion Illustration Stations and Sub-Stations, the purpose of which is to conduct investigational work on a wide range of soil types and under different climatic conditions occurring in Canada than is provided by Experimental Farms and Stations.

There can be no question but that the Dominion Experimental Farms and Illustration Stations have rendered a great service to farmers, in lowering their costs of production, in enhancing

the quality of their products, and so increasing their income and the profits from their farming operations.

Besides the Dominion Experimental Farms and Stations and Illustration Stations, the Dominion provides a special Science Service, which deals with the discovery and control of insect pests and plant diseases. This service operates generally through, and with, corresponding scientific provincial agencies located at the Universities, Animal Health Institutions and the Experimental Farm Service, and is able to give the results of its scientific findings, hence good advice, to other services which come more directly in contact with farmers.

The Dominion Government also provides what is called Production Services, whose object it is to promote the production of quality in agricultural products. These services administer Canadian legislation and certain Acts respecting health and purity in products. Closely connected with the Production Services comes the Plant Products Division, whose services many farmers come in contact with. Another organization maintains livestock pedigrees; then the pedigrees of field crops are maintained by the Canadian Seed Growers' Association.

The Dominion also has set up a Marketing Service, which is responsible for the administration of legislation on grading, and makes investigations into, and gives advice on, matters relating to the efficient marketing of farm products. The matter of inspection and grading is also directed from this Branch.

An Agricultural Economic Division is charged with being a fact-finding body that has to do with the economics of farm production and marketing.

In addition to all these services, the Dominion takes an interest in land utilization and water conservation under the Prairie Farm Rehabilitation Act of 1935. The purpose of this organization is to promote the most efficient use of land, particularly in marginal areas, and the conservation and full use of available water resources. This is the Department which gives financial assistance to farmers, to build dams and reservoirs for watering stock.

There is also set up an organization to administer the Prairie Farm Assistance Act of 1939, which provides for payments to farmers in years whenever any areas may suffer from crop failures. There the farmer receives a sum per acre on a percentage of his cultivated acreage. The farmer himself pays for part of this by deductions at each elevator of one per cent on the value of the grains he markets, which goes to form a revolving fund from which the payments are drawn.

There are also the following Dominion Government services: the Forest Insect Laboratories, Health of Animals Division, Livestock Division, Plant Inspection and Potato Certification, the Rust Research Laboratory with its Dominion Laboratory of Plant Pathology and Dominion Laboratory of Cereal Breeding, and the Stored Products Insect Laboratory, which is charged with controlling the insects that may damage stored grain and flour among other products.

Of no small value to all farmers and to the Grain Trade and to others interested in wheat production and marketing, is the valuable Dominion Bureau of Statistics, which works in conjunction with the Statistical Department of the Board of Grain Commissioners and publishes weekly, monthly, quarterly and yearly all pertinent statistics affecting the production, pricing and marketing of grain.

Provincial Governments are responsible for agricultural education, extension, production, and the organization of farmers' activities, including co-operation, and each province has set up a number of branches which attend to these particular matters, such as field crops, livestock, dairying, veterinary, extension, agricultural schools, poultry, apiculture and fur farming, and includes also crop improvement, soil conservation and weed control, pest control, horticulture and farmstead planning service.

Each province employs a number of district agriculturists, who are graduates of Universities and specially trained to work among the rural people, assisting them with their problems and helping them to make use of the many governmental policies designed to improve the general standard of farming in each province. Provincial governments also organize a woman's division of the Extension Service Branch and provide a comprehensive service in home economy, designed particularly to meet the needs of homemakers in rural areas. The Provincial Governments also sponsor Junior Farm and Home Clubs, sometimes referred to as 4-H Clubs, which provide programs of activities designed to arouse in rural young people appreciation of the farm and of farm life, and to train them in the essentials of good citizenship, farming and home-making.

Alberta has set up a high standard with its three Provincial Schools of Agriculture and Home Economics situated at Olds, Vermilion and Fairview. Instruction given is of a practical nature. The idea of the schools is to take boys and girls and to give them an education in farming practices and in agriculture in general during the winter months, when they have time. During the year 1952 no less than 413 boys and girls (316 in agriculture and 97 in home economics) attended these three institutions. They learned valuable things about agriculture and home economics which otherwise they would not have known. The schools are utilized in the summer for short courses in special farm, home or community purposes.

The three Prairie Universities serve the farmer through their Faculties of Agriculture. These Faculties comprise Departments of Animal Science, Plant Science, Soils, Agricultural Engineering, Dairying and Entomology. They grant degrees. Besides this, the Universities of Saskatchewan and Manitoba offer diploma courses, which give to young people an agricultural education quite similar to that given by the Provincial Schools of Agriculture in Alberta. Among other valuable work, the Universities engage in scientific plant breeding, and each one of them in the past has developed varieties which have proved to be of considerable value to farmers.

Chapter Twenty-two

Further Services to Farmers

THE MAIN FEATURE of prairie agriculture consists in the successful and profitable production of crops, and the quality of the grain produced from such crops has an important bearing on the salability of the grain on world's markets. Quality is the result, to a very great extent, of the use by farmers of good seed, and particularly of seed of an approved variety that in itself has been licensed and shown, under test, to give high quality under prairie conditions.

Two organizations are responsible for seeing to it that seed of the right variety, of high germination and of a proper state of cleanliness is produced and made available to farmers. First the Dominion Plant Products Division and secondly, the Canadian Seed Growers' Association.

The Dominion Plant Products Division administers the Seeds Act of Canada. Under this Act standards are set for three classifications of seed; i.e. Registered seed, Certified seed and Commercial seed; with different grades for each classification. All seeds that enter trade and commerce must conform to the standards set under the Act. Besides the setting and enforcing of standards under the Act for all seeds, the Plant Products Division is also responsible for the trueness-to-variety of "Certified Seed." (The classification of "Commercial Seed" has not necessarily any guarantee of trueness-to-variety because it is not field inspected.) Certified crops, however, are inspected by the Seed Branch. The buyers, therefore, have an assurance that not only does Certified seed conform with high standards of germination and contains no more than a small amount of seeds of other crops and weed seeds, but that in addition, too, it is true-to-variety to a certain standard.

There is, however, a higher class of seed than Certified which is known as Registered seed. It is the business of the Canadian Seed Growers' Association to encourage and to maintain high quality and high standards of excellence in Registered Seed.

The Canadian Seed Growers' Association arranges for the inspection of Registered crops to see that they conform to the extremely high standards of trueness-to-variety set by the Association. This inspection is kindly done for the Association by the Officers of the Plant Products Division. The Standards required for Registered crops and seed are higher than the standards required for Certified seed. Furthermore, for Registered, there are other and more stringent regulations required in the management of the crop than are required with Certified crops.

The Canadian Seed Growers' Association keeps a pedigree of every field of Registered seed, so that any lot of Registered seed can at any time be traced back to the field where it was grown, and from that field back to the stock of Elite seed, and of Foundation seed from which the Registered crop originated. Registered seed, then, is the highest class of seed obtainable in Canada and perhaps anywhere in the world, for no country apparently has a system of producing and registering crops and seeds of the same high standards as Canada.

Farmers, then, if they wish may obtain Registered seed of many kinds and varieties of crops made available to them by seed growers, each of whom must be a member of the Canadian Seed Growers' Association and who has to abide by the stringent rules and regulations as set out by the Association.

The Canadian Seed Growers' Association will have been in existence for fifty years this coming June 15th, for it was started on June 15th, 1904, at Ottawa. It was the outgrowth of the MacDonald-Robertson Seed Growers' Association, the result of a vision of a great Canadian, Dr. Jas. W. Robertson, C.M.G., LL.D., who conceived the idea of a select body of farmers indenturing themselves to the production of the highest quality seed that would be true-to-variety to a high standard of excellence. The Association has almost 4,000 members across Canada, and last year Registered the crops of 6,704 fields of no less than 377 different kinds of cereal grains, forage crops, lawn and turf grasses, field roots, garden vegetables and other kinds of seed, used by farmers in Canada, and produced on 262,000 acres.

The Plant Products Division, under its present name, and under its old name of "The Dominion Seed Branch", has been in operation, too, for a great number of years. It is one of the most important and one of the oldest branches of the Dominion Department of Agriculture. The Canadian Seed Growers' Association which registers crops, and the Plant Products Division which examines crops of Certified seed, between them form a most happy combination that has definitely improved the quality of Canadian crops and grains and which has not only made these grains more salable on the markets of the world, but in addition has oftentimes brought a premium for these high quality grains which is transferred directly back to farmers.

It can be said, then, that the expenditures made by the tax payers of Canada towards the maintenance of the Canadian Seed Growers' Association and the Plant Products Division, have brought dividends to farmers and to all the people of Canada which are so large that it is quite impossible to estimate them. What can assuredly be said, however, is that these two organizations have added materially to the wealth of all of our farmers and so to the wealth of all the peoples of Canada.

Many business organizations which deal directly or indirectly with farmers offer, quite apart from the efforts of their own specialized businesses, certain services which they hope will assist farmers to improve the quality of their agricultural products, increase production and help to lower farming costs. Such businesses make these expenditures because they realise that when farmers are prosperous, then they themselves in turn also have a chance to be prosperous, but that whenever farmers lack prosperity, then these businesses themselves are bound to languish; besides which, up-to-date business concerns feel they ought to take an interest in their customers' welfare.

Among such organizations we find the Canadian Banks, the Railways, Canadian Implement Manufacturers, Oil Companies, Livestock Packing Plants, etc. Other particular and specialized services made available to farmers are those offered by Elevator Companies, which handle the farmers' grains, and which companies include the Line Elevator Companies and the farmer owned organizations such as the Wheat Pools and the U.G.G.

A good deal of the effort put forth by these private business concerns is in the form of extension work. Some of it, however, is in the field of original work, considered to be useful to agriculture, such as is done by the Line Elevators Farm Service, which is a well-organized and well-equipped department of the Northwest Line Elevators Association. It tests the farmers' seeds for purity and for disease and gives valuable general agricultural advice; it also issues pamphlets and leaflets dealing with important agricultural problems.

One large Elevator Company, 25 years ago, set up throughout the West several hundreds of Rain Gauge Stations. They issue weekly precipitation reports, thus supplementing the information given by the Meteorological Department of the Dominion Government. This same Elevator Company, later joined by another, also introduced an entirely new method of Crop Improvement, termed "The Crop Testing Plan."

"The Crop Testing Plan" tests farmers' fields for trueness-to-variety in a simple but effective manner. The work is done with the kind co-operation of the Dominion Experimental Farms, Provincial Universities, Provincial Departments of Agriculture and Schools of Agriculture. Elevator agents form the key men in this effort.

The Elevator Agent collects small samples from the grain farmers haul to elevators and which represents the grain the farmers will later use for sowing their fields. The samples so collected are then grown at a number of different points at what are termed District Plots. Each farmer's sample is sown in three rod rows under a key number, so that the farmer's name is not identified in the field. At harvest time, when the plants are headed out, — at which time different varieties can be identified and distinguished one from another — Plant Breeders and Cerealists analyze and classify each sample in proportion to its trueness-to-variety. The samples are classified as "A", "B", and "C", and "Mixtures"; then the classification given in the report of the Cerealist is made available to each farmer whose sample has been tested.

Those farmers whose samples graded "A" are advised not to sell all their grain to the elevator but to hold back at least part of it to be made available, for a small premium, to their neighbours who may require quantities of true-to-variety seed. Farmers whose samples graded "C" and "Mixtures" are advised to purchase some registered seed, in order to "step-up" the quality of their crops.

During the 25 years this work has been going on, a quite startling improvement in trueness-to-variety of the crops has been registered. In 1931, the first year of the work, just over 60% of the crops graded "Mixtures". This last year only 4% graded "Mixtures".

"The Crop Testing Plan" then makes contracts with leading seed growers, members of the Canadian Seed Growers' Association, to grow large quantities of registered seed, which "The Crop Testing Plan" makes available to farmers at no profit to the Plan. Over a million bushels of registered seed have been distributed to farmers in this way over the years.

In addition to this work of testing crops, "The Crop Testing Plan" also sets out each year hundreds of what are called "Demonstration Plots", consisting of three rod rows of each of the recommended and licensed varieties of wheat, oats, barley, and sometimes rye and flax. Thus the farmers of a certain district can see with their own eyes how each different variety develops and matures under local conditions of soil and climate and so are able to choose the most suitable variety for their use. These plots are being made use of by District Representatives and others as centres at which to hold small meetings of farmers, where the expert can explain the qualities and defects of each variety.

Many other services of a like nature are rendered by other grain handling companies but space does not permit mention of them in detail. "The Crop Testing Plan" work, however, is a

sample of much that is going on. What can be said is that business concerns, which deal with farmers, sense their responsibility to give every aid to farmers they possibly can, so that the quality of the farmers' products may be maintained and improved and so that farmers may become aware of the latest scientific information that will assist them to lower, as far as possible, their costs of producing agricultural products.

Chapter Twenty-three

The Rust Research Laboratory and Scientists in Agriculture

AMONG THE very special helps given to prairie agriculture, and so to farmers, is the work done by what is generally termed "The Rust Research Laboratory" at Winnipeg. This special Branch of the Dominion Department of Agriculture was set up in 1925 to study the whole question of rust as it affected plants, and to create and introduce new varieties that would resist this dread disease, for it had been estimated that since the days when agriculture started in the West, wheat stem rust had taken approximately 10 per cent of the wheat crops alone in the rust areas of Manitoba and Eastern Saskatchewan.

The Rust Research Laboratory consists of two main Departments, the Dominion Laboratory of Plant Pathology and the Dominion Laboratory of Cereal Breeding. Besides originating new rust-resistant varieties of wheat, oats, barley and flax, this institution makes tests for, and gives most valuable advice to, other scientific workers who are engaged in producing varieties to resist the various rust diseases. The Institution has attained international renown and has also done much to assist scientific workers in other countries in studying rust diseases and in producing new varieties which are sometimes found useful in Canada. Our Rust Research Laboratory, therefore, is an important part of a most valuable international effort. It is often said that no money invested by the Government in any enterprise has returned such large dividends as the money spent on maintaining the Rust Research Laboratory at Winnipeg.

Quite a number of new varieties of wheat, oats, barley and rye, which have saved farmers from rust damage to their crops, have been introduced by this institution, and it is conservatively calculated that since rust-resistant varieties in wheat alone were first introduced in Western Canada in 1936, these rust-resistant varieties have saved the farmers of the West from losses that would have amounted to no less than 270 million bushels of wheat, which represents, of course, wealth added to the West and so to Canada.

This is all direct evidence of the great value to farmers and to agriculture as a whole of the work of Scientists in Agriculture. Unfortunately it is found that just as the plant breeder can pro-

duce new varieties of grains that are resistant to certain races of rust, so is Nature continually producing new races of rust. The solution can only be found with the introduction of varieties of wheat, oats, barley and flax, that will be completely resistant to all races of rust. This cannot come about, however, until a great deal more is understood about the nature of rust itself, and of why some grain varieties resist some races of rust and why other grain varieties do not. Here, then, one enters the realm of what is termed Fundamental or Basic Research. Very little of this is being done today, but much more is needed to be done if the crops of the West and in other parts of the world are to be saved from future serious losses from new rust races.

It would seem as though there is an opportunity here for private enterprise itself to enter the picture and to make additional funds available for this most essential work to be done — Fundamental Research in Rust —.

THE AGRICULTURAL INSTITUTE OF CANADA

This mention of the work of scientists in agriculture brings us to the consideration of a most important organization that exists in Canada—the “Agricultural Institute of Canada”—which is made up of scientists in agriculture working in many different fields of effort, including Soils, Herbicides, Phytopathology, Engineering, Field Crops, Horticulture, Economics, Animal Production and the general business of Agriculture.

This Institute for the past thirty-three years has each year held an annual meeting in a different province of Canada. The Institute brings in from distant places the best experts available, to discuss, each one, the details of his chosen specialty. So the very latest information about any form of scientific agricultural effort is made available to the members of the Institute. In this way the members are helped year by year to better the services that they, as members of the Institute, are able to render to agriculture, and so to the farmers of Canada.

The Institute publishes a highly scientific periodical entitled “Scientific Agriculture” and in addition, a bi-monthly review entitled “The Agricultural Institute Review” which contains, among other things, a summary of the scientific papers read at these annual meetings; so the 3,000 members of the Institute, living in each one of the provinces of Canada, is able to derive the benefit of the valuable scientific papers that are read at the annual meetings and of the discussion that ensued.

The work of the members of this scientific organization, therefore, can be said, without contradiction, to form the very foundation of the progress of modern agriculture. The public hears but little about these men and their work for they elect to carry on quietly and without too much publicity. They permit their work to speak for itself. If it had not been for the successful efforts of these scientists in agriculture, Canadian agriculture today would be still almost in the condition it was fifty years ago. Farmers and all of us, therefore, owe a great debt of gratitude to our scientists in agriculture and to this splendid organization to which they belong — the Agricultural Institute of Canada —.

The Farmer Selectors of New Varieties

Mention must be made of the good work, that has greatly benefitted prairie farmers and added considerably to their wealth, done by certain highly skilled farmers who, while they are not classed officially as scientists, yet have made valuable selections with their own keen observant eyes of plants growing in the fields and which have resulted in new varieties or which have been used as parent breeding stocks by scientists to make new and valuable varieties.

The first name that springs to mind is that of the well-known and great figure — Dr. Seager Wheeler — who can be classed as a highly skilled selector of superior plants. Dr. Seager Wheeler, in his search to find an earlier wheat than Marquis — because even Marquis was being caught by the frosts in the Foothills of Alberta and in the more northerly areas — in 1910 observed in a field of Australian White Bobs wheat, with which Seager Wheeler was experimenting, a few heads with red kernels that were earlier than Marquis. He multiplied these few heads and made further selections, and out of it all came the famous Red Bobs, which for many years was widely used by the farmers of Alberta and Northern Saskatchewan and occupied at one time over forty per cent of the total acreage in wheat in Alberta and a fair acreage in Northern Saskatchewan. Red Bobs was afterwards displaced by Thatcher and Saunders which were somewhat superior in milling and baking value. Seager Wheeler also made a selection of a superior and pure strain of Marquis called 10-B, that was adopted by the Canadian Seed Growers' Association to form the foundation stock for all Registered Marquis. Besides these outstanding contributions to prairie agriculture, Seager Wheeler, starting in

1911, won the world's championship for wheat no less than five times at Chicago, competing against the wheat growers of the world, viz. 1911, 1914, 1915, 1916 and 1918, a record that has never been surpassed either in Canada or in any other country.

It has frequently been stated that the wide publicity given to these winnings made by Seager Wheeler at Chicago persuaded thousands of American farmers to emigrate to Canada, and to take up land in this country. It would seem, therefore, that it is difficult to estimate the great good that has come to Western Canada as the result of Seager Wheeler's splendid efforts, and of his keen and most observant eye as a professional plant selector.

Another man, who has not been so much in the public eye, but who nevertheless has rendered inestimable service to the production of rust-resistant varieties, is a farmer named Malcolm McMurachy of McConnell, Manitoba, who in 1930 selected from a heavily rusted field on his farm a wheat plant which appeared to have resisted rust. He sent this plant to the Dominion Department of Agriculture at Ottawa, which at once sensed its value, not as a variety in itself, for it lacked milling and baking value, but for use as a breeding parent. The blood of this selection made by McMurachy has been used in many rust-resistant wheats in Canada and in the United States, and forms one of the parents of the new wheat "Selkirk", resistant to 15-B rust. Mr. McMurachy, too, therefore, has rendered distinguished and most valuable services to Prairie and American agriculture.

There are other men, too, in other fields of effort, who have improved agriculture by their practical observation and experiments. Not the least of all these are included in that long list of prairie farmers who year after year have won world wheat championships at Chicago. We find that since wheat exhibitions have been held in Chicago, that the Grand Championships up to this date 1953, have been won six times by Americans and no less than thirty-three times by Canadian farmers from our Western prairies. These winnings, like Seager Wheeler's, brought much favourable publicity to the prairies, induced immigrants from many countries to settle on prairie lands which would produce this superior wheat and, of course, these winnings had an important influence on the minds of the worldwide buyers of Canadian wheat, and without doubt added greatly to the willingness of these buyers to pay a premium for our high quality wheat.

The names of these winners are as follows:

Year	Name	Address
1911	Seager Wheeler	Rosthern, Sask.
1912	Henry Holmes	Raymond, Alberta
1913	Paul Gerlach	Saskatchewan
1914	Seager Wheeler	Rosthern, Sask.
1915	Seager Wheeler	Rosthern, Sask.
1916	Seager Wheeler	Rosthern, Sask.
1917	Samuel Larcombe	Birtle, Manitoba
1918	Seager Wheeler	Rosthern, Sask.
1919	J. C. Mitchell	Dahinda, Sask.
1920	J. C. Mitchell	Dahinda, Sask.
1921	G. W. Kraft	Bozeman, Montana, U.S.A.
1922	R. O. Wyler	Luseland, Sask.
1923	Major H. G. L. Strange	Fenn, Alberta
1924	J. C. Mitchell	Dahinda, Sask.
1925	L. P. Yates	Fishtail, Montana, U.S.A.
1926	Herman Trelle	Peace River, Alberta
1927	C. Edson Smith	Cornwallis, Montana, U.S.A.
1928	C. Edson Smith	Cornwallis, Montana, U.S.A.
1929	Jos. H. B. Smith	Wolfe Creek, Alberta
1930	Herman Trelle	Peace River, Alberta
1931	Herman Trelle	Peace River, Alberta
1932	Herman Trelle	Peace River, Alberta
1933	Frank Isaacson	Elfros, Sask.
1934	John B. Allsop	Wembley, Alberta
1935	W. Frelan Wilford	Stavely, Alberta
1936	Herman Trelle	Peace River, Alberta
1937	Gordon Gibson	Lardiner, B.C.
1938	F. Lloyd Rigby	Wembley, Alberta
1939	F. Lloyd Rigby	Wembley, Alberta
1940	F. Lloyd Rigby	Wembley, Alberta
1941	William Miller	Edmonton, Alberta

(Owing to the war, wheat exhibitions at Chicago were discontinued between 1942 and 1945 inclusive.)

1946	Mrs. Amy Kelsey	Erickson, B.C.
1947	J. B. Allsop	Red Deer, Alberta
1948	S. J. Allsop	Red Deer, Alberta
1949	Mrs. Amy Kelsey	Erickson, B.C.
1950	R. P. Robbins	Shaunavon, Sask.
1951	Harold Metcalf	Fairgrove, Mich., U.S.A.
1952	Spencer Dunham	Caro, Mich, U.S.A.
1953	Fred A. Hallworth	Taber, Alberta

Chapter Twenty-four

Prairie Banking

AS SOON AS settlement started in the West there was a need by merchants to borrow money. This need was met at first by what are termed private banks, that is by individuals who had surplus capital they were willing to loan out at interest.

As settlement increased there was a demand for more money than could be filled from private purses. The early annals of the Winnipeg Board of Trade inform us that the first bank to open in the West was the Merchants Bank in 1872 in Winnipeg, when the population of the city of Winnipeg was just over 3,000. Agriculture, business and industry increased rapidly, and we are informed that by 1882 there were four chartered banks and six private banks doing business in Winnipeg, and that the population had increased to 25,000 people.

As our history has shown, population, production and exports increased by leaps and bounds, and soon more banks were established, until today we have in Western Canada several thousand branches of the eleven Chartered Banks of Canada, offering financial service in every city and town and in almost every village in the West. These Banks have on deposit over seven million individual savings accounts with total deposits of over nine billion dollars of the people's savings, which is the money the banks loan out to those who need to borrow.

The producers of grain and other products in Western Canada are situated a long way from the markets of the world, so that considerable time must elapse between the moment that farmers are paid for their products until the time, much later, when the worldwide buyers and consumers pay cash for their purchases. Someone, then, must advance a great deal of money to enable the farmer to be paid at the time he initially delivers his grain and other products to country markets. The banks perform the service of taking up this slack and lend the necessary money while the grain is being processed, held in storage and moved to the markets of the world. The huge amounts of money required — many hundreds of millions of dollars each year for grain alone — are quite beyond the capacity of individual firms and organizations themselves to furnish. There never has been a time when the banks were not able and willing to loan the funds required on acceptable security. The banks, therefore, with their depositors behind them, representing the people of Canada who entrust their savings to the banks, make a most valuable contribution to the farmer's welfare, for without these vast sums of money the production and the marketing of prairie grain and other products would not be possible.

The operations of the banks are controlled by the "Canada Bank Act" which sets out what Banks can do and what they cannot do in order to service the need for loans, and at the same time to safeguard the deposits loaned to the Banks by the people of Canada who have made savings.

Prairie Newspapers and Periodicals

The first newspaper established on the prairies was the "Nor'-Wester", started by two young Englishmen — William Coldwell and William Buckingham — who arrived at Fort Garry in the autumn of 1859 and published the first issue of the "Nor'-Wester" on December 28th. Its policy, as described in its prospectus was as follows:—"Its projectors come hither to hold to no set of men, influenced by no narrow prejudices, shackled by no mean antipathies. Their journal will be the vehicle of news, and for the pertinent discussion of local questions; governed only by the desire to promote local interests, and a determination to keep aloof from every tangling alliance which might mar its usefulness at home and abroad." The "Nor'-Wester" unfortunately violated its own principles and became the centre of hot and fiery debates, and so actually ended up as an element of discord among the harmony of the settlement. The "Nor'-Wester" ceased publication after a few years and other newspapers appeared on the scene:— the "Red River Pioneer" and then the "New Nation" which was the organ of Louis Riel and his party. The "Manitoban" was first published on Oct. 15th, 1870, twice a week. Soon appeared the "Manitoba Free Press Weekly" and then the "Manitoba Free Press Daily", both of which have continued to this day.

As settlement increased so did newspapers and periodicals multiply, until today the cities and large towns of the West are served by most excellent daily newspapers. Of particular value to farmers are the country and weekly newspapers and monthly farm magazines. All these newspapers and periodicals are rendering to farmers, and to agriculture, most valuable service in speedily distributing news about new agricultural methods and practices, and in living up to the principles, as far as they can, as first enunciated by the "Nor'-Wester" in 1858.

Indeed it can be safely said that in no country in the world do the farmers so quickly hear about new practices and scientific inventions and introductions, as do the farmers on these prairies. All farmers, then, and other Canadians too, owe a debt of gratitude to these many newspapers and periodicals which so well serve the Prairie Provinces.

Mention must be made, too, of the value of the broadcasting of news and information by the radio stations of the West, which broadcast daily, as a special feature, news dealing with agriculture.

Chapter Twenty-five

The Milling Industry

AS SOON AS wheat growing starts in any area, mills to grind wheat into flour quickly appear on the scene. Our Western Prairies were no exception. The "Nor'-Wester" of April 28th, 1860, notes that "for 30 years Manitoba had had to put up with primitive grist mills for grinding grain, then came a few water wheels, and on May 28th, 1860, was erected the first modern steam flour mill." We learn, too, from the annals of the Winnipeg Board of Trade that in 1884 "there were seven quite large flour mills operating in Manitoba, and that there were exported in that year 50,000 sacks of flour." The Ogilvie Milling Company, as has already been mentioned, was the first to adopt the new system of Hungarian rollers in their mills in Winnipeg; this was in 1881. In 1887 the Lake of the Woods Milling Company was formed to manufacture flour from Western wheat. The Western Canada Flour Mills, Ltd., and the Maple Leaf Milling Company, Ltd., also soon built modern mills. Other Companies followed.

This steady advance in efficient milling was made possible to a great extent by the use of the Hungarian roller system, which was able to grind hard prairie wheat into an acceptable flour, something that had not been possible with milling stones.

The Canadian Milling Companies perform two important functions; one is to grind wheat into flour for the use of the people of Canada, and the other is to export flour which in itself has become a very large industry. For the crop year 1952-53 Canadian Flour Mills processed into flour the equivalent of 107 million bushels of wheat, of which the equivalent of 56 million bushels of wheat were exported and 51 million were for domestic use.

Too much stress cannot be laid upon the importance of the most excellent quality flour milled and exported by Canadian Milling Companies as an advertisement for Canadian wheat, for it is obvious that with this high quality Canadian flour available on the markets of the world, European and other millers must themselves purchase large quantities of high quality Canadian wheat in order to make flour that will compete in quality with the flour exported from Canada.

It has often been said that Canadian flour is the standard bearer throughout the world for high quality Canadian wheat. Wheat is milled into flour by Canadian mills at a standard of efficiency and at a low cost that will compare with any flour mills anywhere in this world.

Livestock on the Prairies

In Manitoba the Indians and the Buffalo gave way to the fur traders and the fur traders gave way to the farmers. In the North West Territories (now Alberta and Saskatchewan) however, the Indians and Buffalo gave way to the fur traders and the fur traders gave way to the cattlemen, and the cattlemen gave way to the farmer settlers.

Cattle came into the North West Territories via Texas to Montana, and from Montana to Southern Alberta as soon as the Blackfoot Treaty No. 7 had been signed in 1877 and after the North West Mounted Police had arrived in 1874 at Fort McLeod, which assured safety from Indian raids and when, too, the Buffalo herds were beginning to become extinct.

John MacDougall, and his brother, are credited with bringing in the first small band of horses and cattle from Montana to Morleyville, West of Cochrane. This was in 1871 and 1872, but Fred Kanouse is said to have started ranching proper in the West when he brought in one bull and 21 cows on the open plains in 1877. By 1880 a number of small ranchers started up west of and around Calgary at Fort MacLeod, High River and at Pincher Creek. The first ranchers experienced many difficulties and troubles. In 1885 a count showed there were on the open plains of the West 47,000 cattle, 9,700 sheep and 4,300 horses. By 1892 there were 139,000 head of cattle on the ranches. Alberta cattle soon found exports to Eastern Canada and to Britain. In 1887 the first train-load of cattle was sent to the overseas market.

Numerous disputes soon ensued between ranchers and the homesteaders who coveted this open land. In spite of the homesteaders and their barbed wire fences a number of large ranches were established, such as the Cochrane Ranch and the Bar-U Ranch, and then in 1884 came the big four in Canadian ranching, including George Lane, Pat Burns, A. E. Cross and Archie MacLean. The first breeds of cattle brought up from the United States to Canada were the Longhorns; gradually, however, these gave way to the British breeds which we have today: Shorthorns, Herefords, Aberdeen Angus, Galloways, West Highland and the Devons.

The golden age of ranching in the grand manner started in 1881, but by 1897 began to fade as the settlers encroached further on the open ranching lands. Sheep and sheepmen also gave trouble, so in 1882 regulations were made to prevent sheep from grazing on certain lands, so preserving these for the cattlemen.

By 1897 a large trade opened up in the United States for stockers and feeders. From this time on, however, western beef began to be produced in increasing quantities from farms and on smaller ranches which is all going on today. The census of 1951 revealed there were in the west 2,706,084 cattle and 532,120 sheep.

Chapter Twenty-six

Markets, Prices and Marketing

AT TIMES, in the very early days, when good rainfall occurred, farmers in Manitoba produced more wheat than the local people required for flour. The cry by farmers, then, was for **markets** on which to sell the surplus.

This need was filled in the very early days by general merchants who took chances and assumed the risks of buying grain from farmers, hoping that later on they might be able to dispose of it. The general rule was to offer farmers 60 cents a bushel, quite a fair price considering the high purchasing power of money in those days. As the high quality of prairie wheat began to be recognized throughout the world high demands ensued, which have continued up to this very date, as is shown by the fact that regardless of the vast quantities of wheat progressively produced in the West decade by decade there never have been, except in a few periods, any burdensome unsold "carry-overs" at the end of each crop year.

The exceptions were from 1930 to 1935, when the Dominion Government, through its official agent, attempted to stop price from falling by purchasing and stock-piling large quantities of prairie wheat; the effort failed in its purpose. The next period of large "carry-overs" was from 1940 to 1945, during the course of the second World War when the normal markets for Canadian wheat were cut off by war operations. The third period is the present time under Compulsory State Marketing, augmented by three large crops, and a decided worldwide slackening in the demand for Canadian wheat.

With the exception of these three stated periods, in all other years each crop was sold quite readily and farmers were always able to sell to the local elevators, and could obtain spot cash for all they desired to haul to market.

Prices, however, have from time to time been a source of trouble with farmers. At times when prices were relatively high farmers were most happy, but in times when they were low then naturally farmers met with serious difficulties and these difficulties were greatly increased when low prices happened to coincide with periods of drought and poor crops, just as happened during the world depression of the 1930's.

Fluctuating Prices

The first time that farmers really suffered and began to complain seriously about prices was in the 1930's, a period of world depression, and of low yields. This period extended from 1930 to 1935. At the start of the second Great War, from 1940 to 1942,

when exports were greatly restricted because of the war, relative prices were low and brought difficulties to farmers. The recent period from 1949 to 1953 also brought difficulties to farmers, for while the money price has been relatively high, averaging over \$1.80 for 1 Nor. Fort William, yet the purchasing power of this \$1.80 was so low that the real prices, considering their purchasing power, averaged from 96 cents down to the present year 1954 of only 80 cents a bushel, compared with the purchasing power of money of 1935-39. Throughout most of the years, however, since 1890, farmers, both in money prices and in the purchasing power of those prices, have done reasonably well.

Farmers have always understood that they were subject to considerable hazards from the fluctuating weather, and realized that when rainfall was lacking, or when rust or insect damage prevailed, it was no one's fault. With respect to prices, however, farmers adopted in general a different attitude. From the earliest times they thought those in charge of the marketing were responsible for low prices, forgetting perhaps—and a very natural human failing it was—that these prairies are situated over 3,000 miles away from world markets, and that prices depend to a considerable extent on the willingness and ability to pay of the **consumers** of Canadian wheat and other grains situated in 100 different countries of the world; and that Canadian wheat, for instance, has to compete not only with wheats offered from a number of other exporting countries on the markets of the world, but in addition has to compete with all other foodstuffs produced anywhere in this world that could be substituted for wheat—and these substitute foodstuffs are many—. All of which means that it is often forgotten that the consumer has as much to do with making price as has the producer. In short, that it is not only supply, but supply and demand that make price.

Money Price vs. "Real" Price

Another thing frequently forgotten is the confusion between "money" prices and what might be termed "real" prices, which means the purchasing power of money, and which it is necessary to keep in mind in order to have a true picture of any comparison made between, say, present day prices and prices of some years ago. Since 1935-39, according to the Dominion Bureau of Statistics, the Canadian dollar in the hands of prairie farmers has lost more than half of its purchasing power. Present day prices, therefore, must be more than cut in half if we are to make comparisons with prices of previous years. For instance, the price of \$1.85.5 paid for 1 Nor. Fort William in 1950-51 had a purchasing power of only 89 cents compared with the money of 1935-39. Similarly the price for 1951-52 paid to farmers of \$1.83.6 a bushel for 1 Nor. Fort William had a real value of only 81 cents, and the price paid in 1952-53 of \$1.81.7 had a real value of only 80 cents in the money of 1935-39.

The Open Market

The difficulty of realizing these matters caused farmers even from the earliest days to be critical of marketing systems, because farmers felt that these marketing systems actually themselves made price, or at least had a great deal of control over it. The grain marketing system that had been in use since the start of prairie agriculture was first the "Open Market" and then later the "Open Futures Market." Under the "Open Market" the representatives of buyers and sellers meet together on the trading floor of the Winnipeg Grain Exchange, and in virtue of all the information pouring in minute by minute from every country in the world about crops and demand, make their trades, and so register a price, but individual traders or combinations of them have no more control under this system of making a price than a thermometer has control over the temperature of the atmosphere. The thermometer merely registers the temperature. Likewise a barometer registers the pressure of the atmosphere, and the "Open Market" registers the price in accordance with the many complex international factors of supply and demand; but the thermometer does not make the temperature. The barometer does not influence the pressure of the atmosphere and the trading on the "Open Market" does not in itself control price.

The actual marketing of Canadian grain is done by innumerable merchants, sellers and buyers of grain, exporters and importers, and by speculators, which latter have ever been a relatively small—much less than is generally believed—but still important part of the buying and selling of grain and of the movement of the grain from producer to consumer, and of the holding of grain until far-off consumers require it.

The Winnipeg Grain Exchange

The "Open Market" of the Winnipeg Grain Exchange started in the year 1887 where representatives of buyers and sellers met to buy and sell grain, according to prices registered. It was found, however, that those who then bought grain assumed considerable risks because of the possibility of prices falling before the grain that had been purchased could be placed, oftentimes many months later, into the hands of the consumers and when the consumers would pay for it. It was customary, therefore, in those early days, according to evidence given before the Stamp Commission, for buyers of Canadian grain to charge farmers not only the necessary handling charges and the freight on such grain, but also to deduct 10 cents a bushel to cover the serious risks of a possible fall in price that had to be assumed and undertaken by the buying merchants.

The "Futures" Market

In the year 1904, however, a remarkable innovation was added to the Grain Exchange, and which saved farmers large sums of money. This was the "Futures" market which enabled merchants

to hedge or insure themselves against loss in the event of a fall in price. Immediately the buyers of Canadian grain were able to cease deducting 10 cents a bushel for risks, because this 10 cents was absorbed by the workings of the "Futures" market. From this time on, then, farmers received 10 cents a bushel more than otherwise they would have received, and this saving to farmers has gone on throughout the years when the wheat "Futures" market was in operation.

The principle involved with the "Futures" market is as follows: When farmers deliver their grain to country markets they naturally wish to be paid for it at once, but it would be many months before the consumers, living from 1,000 to 3,000 miles from the producers, could obtain possession of this grain and be willing to pay for it, and during this long period there was a serious risk of a loss to the merchants who bought the grain, because prices in the interval might decline. Under the "Futures" market, however, those who purchase Canadian grain can "hedge" their purchases from farmers, and so be assured that they will always receive exactly the price they paid the farmers even months later. Exporters and importers and domestic and overseas millers similarly use the "Futures" market. This is all made possible because some people are willing to step into the breach and buy grain and hold it at their own risk until a future date. Such buyers are called speculators and form an important part of those who render a distinctive and valuable service to farmers. Neither, however, the trading by merchants nor the buying by speculators on the "Futures" market has any effect on world prices as warranted by supply and demand. The "Open Futures Market" does, however, assure that merchants can safely pay to farmers the highest possible price at the moment of purchasing their grain.

The Royal Commissions

All this, of course, is extremely involved and it has always been most difficult to explain it to farmers. It is not to be wondered at, then, that some believed, when prices were low, that something was wrong with the "Open Market", with speculators, and with the system of "Futures" trading. So from time to time farmers complained and the Government often appointed a Royal Commission to look into the matter. No less than fifteen Royal Commissions have investigated the Winnipeg Grain Exchange and marketing in general. Not one has recommended even any serious amendment to the system. Indeed it has often been stated officially that the "Open Futures Market" functions in the interests of the farmers.

The Wheat Pools

In spite, however, of these many favorable reports by Royal Commissions, many still remained unconvinced and so dissatisfied, to the extent that in the early 20's the idea was conceived that if farmers handled and marketed their own grain, that

their discontents might be ended and a higher price for wheat might be secured. So was set up the bold experiment of the three Prairie Wheat Pools, with the avowed intention of marketing wheat without using the facilities and services of the Open Futures Market. The Pools have been most successful in the handling of grain at country and terminal elevators, just as the United Grain Growers and the Saskatchewan Co-operative had been long before them, but experience has shown that no combination of farmers, or of any other people, could have any effect whatsoever in influencing the price of wheat. The lesson was bitterly learned by the Wheat Pools when in 1930 their worldwide marketing system had to cease functioning, and they found themselves owing the large sum of approximately 22 million dollars which they were unable to pay, and had to call on the Provincial and Dominion Governments to guarantee these debts. The Wheat Pools then continued to operate their country and terminal elevators, but pressed the Dominion Government to take over the marketing and price-setting of wheat, believing that the Government might be able to influence price in a way that farmers collectively could not do. The Government finally consented, in September 1943, to take to itself, through its Agent the Wheat Board, the sole right to market and set a price for all prairie wheat.

State Marketing

It was supposed at the time that such Compulsory State Marketing would bring satisfactory prices and security to farmers and would assure that all the wheat that farmers cared to grow could be quickly sold. Events have shown, unfortunately, that these were vain hopes, for today farmers are unable to haul all they wish to country elevators, and the Government, through its Agent the Wheat Board, is finding difficulty in selling all that is produced, and in addition it is being slowly discovered that a Government has no more control over prices than ever had the Open Market of the Winnipeg Grain Exchange, for broad price fluctuations have been just as great under the Government Monopoly as they ever were under open markets. It is true that minor fluctuations have been smoothed out but, it is contended, only at the expense of the farmer receiving considerably less for his wheat during the past seven years than he would have received under the "Open Futures Market" system.

The Farmers' Problems Still Unsolved

From all this it would appear that the fundamental problem of assuring security to the farmer is still unsolved, for the solution would seem to depend on factors over which neither individuals nor Governments have much, if any, control.

These factors are three in number: The first concerns an assurance of yield per acre which is governed entirely by rainfall and other climatic conditions which cannot be controlled by man, and which results, therefore, in wide fluctuations in yields.

The second factor is the matter of price which is made by innumerable and complex international factors of supply and demand and the value of money over which again no one has much, if any control, illustrating why prices in the past have fluctuated, still fluctuate at the present time, and probably always in the future will fluctuate.

The third factor concerns the fluctuation in the value of money or in the purchasing power of money. In spite of all the financial and monetary controls, exercised by individual Governments or by Governments collectively, the value of money continues to change, as we observe from the simple fact that the value of the Canadian dollar in the hands of farmers is less than one-half of what it was before the recent Great War, and that the value of money in some other countries has declined to a much greater extent.

For a farmer to have security, therefore, he must have assurance of a good yield, of a satisfactory price and of an unchanging value in the money he receives for his products.

It is thought by many, that the solution of these problems is completely beyond the powers of man, and that changes in methods of marketing or in the setting up of International Agreements can have but little or no material effect in helping farmers.

The Farmer's Own Security

Some are of the opinion, therefore, that true security for the farmer must lie mainly with his own efforts, i.e. to use the best varieties and breeds that will give him the highest quality and highest yields with his crop and livestock, and to adopt quickly those scientific practices which from time to time become available, and which will help to keep down costs of production; and particularly that in the good years, which occur from time to time, the farmer should set aside sufficient feed and seed, and money in the bank, to tide him over the poor years that may come, brought about either by low yields or low prices or by the changing value of money.

The High Cost of Starting to Farm

There is another serious matter that might well be mentioned here. It concerns not so much present day farmers, but those who are seeking to start farming; it refers to the present day extremely high cost of purchasing a farm with the necessary equipment.

John Macoun, in his book "Manitoba and the Great North West", published in 1882, tells us he investigated the amount of money a homesteader with his wife and three children—a family of five—needed to start homesteading on the prairies. He found that a homesteader would require the sum of \$660.00 which would

enable him to homestead on a quarter section of land, and later to pre-empt another quarter, and that with this sum of \$660.00 the farmer could support himself and his family until his land became productive and until he became self-sufficing.

Macoun found that at the end of the fifth year, starting with \$660.00, the farmer would have net assets valued at \$3,320.

The days of free homesteading have long since passed and today a man who desires to start farming must, as a rule, purchase a going concern from someone who has either retired or desires to sell his farm.

In order to find out how much it would cost a man to start farming today, the Searle Grain Company recently sent a questionnaire to their Elevator Agents, situated in most of the districts of Alberta, Saskatchewan and Manitoba. Each was asked to give information on how much it would cost in his district for land, for buildings, for machinery and equipment, and for livestock, and how much cash a farm family of five would need to carry on for a year until the farm products could be sold for cash. Most of the Elevator Agents replied and it was apparent from their replies that they had made the most careful investigations and inquiries in their respective districts.

The averages came to the following: For land \$13,500; for buildings \$8,956; for machinery and equipment \$8,469; for livestock \$1,580 and for the needed cash in hand to carry on for a year \$2,099, making a grand total of \$34,604 that would be required for a farmer to purchase a fully equipped farm and just over a half section of land.

If these figures are correct, and inquiries from other sources seem to indicate that they are approximately correct, then there comes to mind the thought of how is a new man to start farming today? Assuming that some organization might put up on mortgage or loan half of the money, how is a prospective new farmer to find the sum of at least \$16,000 cash that he would need? Few indeed could do this. What, therefore, is the future of prairie agriculture as far as new farmers starting up is concerned? Does it mean that tenant farming will gradually increase in Western Canada as it has done in Britain and in many other countries? The thought is left to the mind of the reader, with the belief, however, that this is one problem for which a solution may be found in the future to assure the individual ownership of the farmer who works the land.

Chapter Twenty-seven

Prairie Soils

THE FARMER'S chief natural resource consists of the prairie soils. These soils vary greatly from area to area in their composition and quality.

Each kind of soil needs special treatment and management to assure the utmost production of the special crop for which each type of soil is best suited.

Prairie soils are exceedingly fertile, and immediately after breaking, can produce good crops, with the exception of sub-marginal and grey wooded soils which latter need several years of preliminary planting to leguminous crops and the application of special fertilizers, after which even these grey wooded soils can produce good grain crops.

The fertility of prairie soils comes from thousands of years of growth of natural grasses which have decomposed and deposited organic matter in the top soil. The longtime average yield of wheat is 16.21 bushels to the acre, other crops in proportion. There is sufficient natural fertility in our prairie soils, however, almost to double these yields if only the prairie areas enjoyed a greater average rainfall. This is shown by the fact that in years of better than normal rainfall then much better than average yields are produced. That good fertility has been relatively unimpaired in most areas is shown by the yields of the last three years — 1951, 1952 and 1953 — when the yields per acre were at least equal to, if not better than, any yields per acre in the past.

This, however, is not to say that even with only average rainfall these soils cannot produce somewhat better yields by more careful management and by the skilled application of the proper kind of fertilizers and by returning to the soil each year as much of the trash from the crops as possible. There is, then, no reason, if soils are carefully managed and conserved, that they will not almost indefinitely continue to produce profitable crops of some kind or another.

There are, however, two serious problems facing farmers in many areas. One of them is the loss of top soil from water erosion which can wash away the soil down to the sedimentary rock, and the other concerns the loss of top soil from wind blowing, usually on summerfallowed land. These are matters, however, about which the farmer is well aware and on which he is being constantly advised; fortunately methods are known by which these losses from water erosion and wind erosion can at least be kept down.

The composition of the top few inches of soil is exceedingly complex, for it contains almost unimaginable quantities of micro-organisms (bacteria, etc.), of insect life and earthworms, all of which tend to build up and maintain fertility.

Western Canada is fortunate in having highly skilled specialists at our Universities who are constantly making soil surveys and studying structure of soils, and who make available to farmers appropriate advice on the improvement and conservation of our soils.

Chapter Twenty-eight

A Tribute to Prairie Women

By KATHLEEN STRANGE

NO STORY of Western Canada would be complete without at least brief mention of the part women have played in the development of the prairies, and the service they have contributed, not only to their menfolk, but to the country as a whole.

From the very beginning, women shared the disappointments and the setbacks, as well as the rewards, that attended life on these western prairies in the early days. They cheerfully endured the hardships of homesteading, the loneliness and the gruelling hard work. Many of them lived in sod houses or rough log shacks, far from civilization, and with none of the amenities of life such as western farm women, for the past part any rate, know today. Even the more gently-nurtured ones — and there were many of this kind — had to learn to do everything for themselves — pump water, trim lamps, bake bread, milk cows, cook for hungry men, raise their children without help, and sometimes even do their stint in the fields.

For many years these pioneer women worked so hard around their own farms they had but little time or inclination to take part in outside activities. As things became more settled, however, the women began to engage in outside activities, in an effort to improve the conditions of rural life.

Today the West can boast of many pretentious, well-equipped farm houses, surrounded by beautiful, well-kept grounds, with telephone service, electrification and other modern improvements, largely as a result of the work, both behind the scenes and in active organized groups, of rural women. They have been responsible for better schools, municipal hospitals and rural health services, travelling libraries and other important improvements that have benefitted farming people everywhere.

Of recent years western farm women have branched out still further and have made themselves prominent not only in community but in provincial and even national affairs. It was a group of five western women, for instance, who carried an appeal to the Privy Council to have women declared "persons" and so

eligible for appointment to the Senate. Western farm women, too, have been appointed members of the Legislatures of all three prairie provinces at various times, all undoubtedly to the betterment of this country as a whole.

*When greater periods men environ,
Then women show a front of iron,
And, gentle in their manners, they
Do bold things in a quiet way.*

Thomas Dunn English.

FINIS

Appendix

APPENDIX I

VARIETIES OF WHEAT USED BY FARMERS IN WESTERN CANADA SINCE 1812

These varieties were in use by the farmers of Manitoba between 1812 and 1870 when Red Fife was introduced. Norway White was said to have been brought in by the original Selkirk Settlers. The other varieties came in with other groups of settlers or were brought in by merchants from different countries in the world who offered them for sale to the Red River farmers as superior varieties. Red Fife, after 1870, soon took the place of all these varieties.

NORWAY WHITE
ASSINIBOINE
BLACK SEA
ENGLISH

DEFIANCE

IRISH
PRAIRIE DU CHIEN
SCOTCH FIFE
CLUB

SAXONIA

GOLDEN DROP
WHITE RUSSIAN
ODESSA RED
CONVERTED SCOTCH

NAMES OF VARIETIES, WITH DATES INTRODUCED IN 1870 AND AFTER

RED FIFE	1870	AXMINSTER	1923
WHITE FIFE	1889	QUALITY (FLORENCE)	1923
LADOGA	1889	RED BOBS	1925
WHITE RUSSIAN	1889 ⁸⁶	TYPE 1 C	1925
PACIFIC BLUE STEM	1890	MONTANA KING	1926
HARD RED		GARNET	1926
CALCUTTA	1893	REWARD	1928
PRESTON	1893	RELIANCE	1933
STANLEY	1893	THATCHER Resistant to some races of rust	1935
PERCY	1894	APEX " " " " " "	1937
HURON	1894	RENOWN " " " " " "	1937
BISHOP	1897	CORONATION " " " " " "	1937
BLUE STEM	1904	REGENT " " " " " "	1939
EARLY RED FIFE	1908	CANUS	1940
FEDERATION	1909	REDMAN Resistant to some races of rust	1946
PRELUDE	1910	RESCUE " " saw flies	1946
MARQUIS	1911	SAUNDERS " " some races of rust	1947
PIONEER	1912	LEE " " " " " "	1950
RUBY	1912	CHINOOK " " saw flies	1952
RENFREW	1920	SELKIRK Resistant to 15-B Rust	1954
VERMILION	1920		
SUPREME			
(RED BOBS)	1921		
EARLY TRIUMPH			
(RED BOBS)	1921		
AUORE	1922		
KOTA	1922		
PARKERS			
SELECTION	1923	MINDUM	1919
KITCHENER	1923	PELISSIER	1921
CERES	1923	STEWART	1947
		CARLETON	1950

DURUM VARIETIES

LONGTIME ACREAGE, YIELD AND PRODUCTION OF BARLEY

APPENDIX III

MANITOBA				SASKATCHEWAN				ALBERTA				PRAIRIE PROVINCES			
Year	Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted	Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted		Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted		Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted	Year
1953	2,355	26.6	63,000	2,745	30.6	84,000		3,489	33.0	115,000		8,599	30.5	262,000	1953
1952	2,165	32.8	71,000	2,644	34.8	92,000		3,336	35.4	118,000		8,145	34.5	281,000	1952
1951	2,040	26.5	56,000	2,561	30.8	73,000		3,011	36.2	105,000		7,530	31.1	234,000	1951
1950	1,717	32.0	55,000	1,954	23.5	46,000		2,534	22.1	56,000		6,205	25.3	157,000	1950
1949	1,699	23.5	40,000	1,800	18.3	33,000		2,118	17.0	36,000		5,617	19.4	109,000	1949
1948	1,540	29.2	45,000	2,316	18.1	42,000		2,226	24.7	55,000		6,092	23.3	142,000	1948
1947	1,901	17.9	34,000	2,780	16.2	45,000		2,354	22.1	52,000		7,035	18.6	131,000	1947
1946	1,697	25.3	43,000	2,317	18.6	43,000		1,783	26.9	48,000		5,797	23.1	134,000	1946
1945	2,139	24.5	52,500	2,672	20.4	54,500		2,048	18.1	37,000		6,859	21.0	144,000	1945
1944	2,123	25.8	54,700	2,698	26.7	72,000		1,942	26.6	51,700		6,763	26.4	178,400	1944
1943	2,341	29.0	68,000	3,316	24.1	80,000		2,239	25.0	56,000		7,896	25.8	204,000	1943
1942	2,021	36.6	74,000	2,468	37.3	92,000		1,925	39.0	75,000		6,414	37.6	241,000	1942
1941	1,531	26.1	40,000	1,661	16.1	26,700		1,543	18.1	28,000		4,735	20.0	94,700	1941
1940	1,256	21.9	27,500	1,251	18.8	23,500		1,115	28.7	32,000		3,622	22.9	83,000	1940
1939	1,344	20.8	28,000	1,149	22.6	26,000		1,114	24.2	27,000		3,607	22.5	81,000	1939
1938	1,355	22.9	31,000	1,207	16.6	20,000		1,125	26.0	29,200		3,687	21.8	80,200	1938
1937	1,393	25.0	34,800	1,174	4.7	5,518		995	22.2	22,100		3,562	17.5	62,418	1937
1936	1,423	13.3	18,990	1,302	12.8	16,627		999	17.0	17,000		3,724	14.1	52,617	1936
1935	1,121	20.6	23,100	1,146	20.2	23,149		920	17.8	16,376		3,187	19.7	62,625	1935
1934	1,125	15.4	17,298	1,088	11.4	12,403		749	20.1	15,041		2,962	15.1	44,742	1934
1933	1,173	14.4	16,900	1,228	14.3	17,560		631	20.3	12,783		3,032	15.6	47,243	1933
1932	1,123	17.8	20,014	1,330	17.6	23,400		701	28.1	19,700		3,154	20.0	63,114	1932
1931	1,129	13.6	15,400	1,375	10.4	14,340		710	23.3	20,800		3,214	15.7	50,540	1931
1930	1,991	25.1	49,974	2,016	20.1	40,522		748	25.4	18,999		4,755	23.0	109,495	1930
1929	2,182	16.7	36,518	2,229	13.8	30,755		704	17.8	12,514		5,114	15.6	79,787	1929
1928	1,937	27.1	52,569	1,621	27.3	44,266		546	29.1	15,849		4,104	27.5	112,684	1928
1927	1,512	24.3	36,717	926	20.3	27,129		400	30.0	12,000		2,838	26.7	75,846	1927
1926	1,761	28.9	50,880	872	25.1	21,891		416	22.1	9,146		3,048	26.9	81,917	1926
1925	1,645	23.8	39,213	858	21.1	18,105		437	25.8	11,273		2,940	23.3	68,591	1925
1924	1,373	29.8	40,923	954	18.2	17,360		494	25.0	12,347		2,291	25.0	70,630	1924
1923	1,156	22.3	25,726	640	30.1	19,278		384	38.5	14,774		2,180	27.4	59,778	1923
1922	969	29.8	28,863	636	29.0	18,511		378	16.5	6,238		1,983	27.0	53,612	1922
1921	1,043	18.9	19,682	498	26.8	13,343		568	20.5	11,657		2,109	21.2	44,682	1921
1920	899	20.9	17,520	519	20.2	10,502		481	26.5	12,739		1,839	22.2	40,760	1920
1919	894	19.2	17,149	493	18.2	8,971		414	25.5	10,562		1,801	20.4	36,682	1919

Year	Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted	Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted		Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted		Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted		Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted		Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted		Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted		Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted	Year								
1918	1,103	25.4	27,963	699	17.0	11,888		470	16.5	7,756		2,272	21.0	47,607		2,272	21.0	47,607	1918																				
1917	708	22.5	15,930	670	21.0	14,068		472	22.0	10,386		1,850	21.8	40,384		1,850	21.8	40,384	1917																				
1916	688	20.0	13,729	367	27.0	9,916		337	29.0	9,774		1,391	24.0	33,419		1,391	24.0	33,419	1916																				
1915	567	29.4	16,658	300	31.7	9,523		304	32.3	9,822		1,171	30.7	36,003		1,171	30.7	36,003	1915																				
1914	468	21.0	9,828	290	16.9	4,901		178	27.0	4,806		936	20.9	19,535		936	20.9	19,535	1914																				
1913	496	28.8	14,305	332	31.3	10,421		197	32.2	6,334		1,025	30.3	31,060		1,025	30.3	31,060	1913																				
1912	481	32.9	15,826	292	32.9	9,595		187	33.0	6,179		860	32.9	31,500		860	32.9	31,500	1912																				
1911	448	33.4	14,967	274	31.6	8,658		164	26.5	4,349		668	31.6	27,974		668	31.6	27,974	1911																				
1910	416	15.7	6,517	130	23.6	3,061		121	20.4	2,480		667	18.1	12,058		667	18.1	12,058	1910																				
1909	606	30.0	20,866	135	33.3	4,493		186	32.3	5,999		1,077	30.8	31,358		1,077	30.8	31,358	1909																				
1908	662	25.8	17,093	81	24.1	1,952		130	29.9	3,881		823	26.3	22,926		823	26.3	22,926	1908																				
1907	650	25.8	16,753	70	17.0	1,350		55	19.8	1,082		784	24.5	19,185		784	24.5	19,185	1907																				
1906	474	37.0	17,533	54	24.6	1,316		74	29.3	2,157		601	34.9	21,007		601	34.9	21,007	1906																				
1905	432	32.5	14,064	83	27.1	893		65	27.5	1,773		588	31.6	16,731		588	31.6	16,731	1905																				
1904	361	31.0	11,178	43	25.6	1,103		43	25.6	1,103		447	29.9	13,384		447	29.9	13,384	1904																				
1903	327	26.7	8,707	55	26.4	921		35	26.4	921		386	26.6	10,549		386	26.6	10,549	1903																				
1902	330	35.9	11,848	10	23.9	435		18	23.9	435		386	34.7	12,718		386	34.7	12,718	1902																				
1901	191	34.2	6,536	10	36.8	369		10	36.8	369		216	34.5	7,274		216	34.5	7,274	1901																				
1900	155	18.9	2,939	8	20.7	176		8	20.7	176		172	19.1	3,293		172	19.1	3,293	1900																				
1899	183	29.4	5,379	7	23.62	169		7	23.62	169		197	29.0	5,717		197	29.0	5,717	1899																				
1898	158	27.06	4,278	9	26.29	225		9	26.29	225		175	27.0	4,728		175	27.0	4,728	1898																				
1897	163	20.77	3,184	8	20.0	167		8	20.0	167		169	31.5	3,518		169	31.5	3,518	1897																				
1896	120	24.8	3,172	8	22.0	179		8	22.0	179		144	24.5	3,530		144	24.5	3,530	1896																				
1895	154	36.69	5,645	8	22.0	174		8	22.0	174		190	35.2	5,993		190	35.2	5,993	1895																				
1894	120	25.87	2,982	8	12.0	93		8	12.0	92		135	23.4	3,168		135	23.4	3,168	1894																				
1893	115	22.11	2,548	7	18.0	135		7	18.0	135		138	21.6	2,818		138	21.6	2,818	1893																				
1892	98	29.0	2,832	7	20.0	146		7	20.0	146		113	27.6	3,124		113	27.6	3,124	1892																				
1891	90	35.6	3,198	7	15.0	106		7	15.0	106		104	32.8	3,410		104	32.8	3,410	1891																				
1890	66	31.33	2,069	7	18.0	123		7	18.0	123		98	28.9	2,315		98	28.9	2,315	1890																				
1889	80	13.1	1,052	7	12.0	80		7	12.0	80		93	13.1	1,212		93	13.1	1,212	1889																				
1888	69	30.0	2,045	6	20.0	129		6	20.0	128		91	28.4	2,303		91	28.4	2,303	1888																				
1887	56	34.31	1,925	6	18.0	112		6	18.0	112		86	31.6	2,149		86	31.6	2,149	1887																				
1886	70	18.70	1,301	6	16.0	96		6	16.0	96		82	18.2	1,493		82	18.2	1,493	1886																				
1885	51	29.0	1,113	6	22.2	129		6	22.2	129		63	21.8	1,371		63	21.8	1,371	1885																				
1884	41	32.83	1,364	4	20.0	86		4	20.0	86		49	31.3	1,536		49	31.3	1,536	1884																				
1883	60	30.0	1,898	3	20.0	55		3	20.0	55		57	30.9	2,008		57	30.9	2,008	1883																				
1880	13	20.0	254	1	20.0	24		1	20.0	24		15	20.1	302		15	20.1	302	1880																				
1878																			1878																				

LONGTIME ACREAGE, YIELD AND PRODUCTION OF BARLEY

APPENDIX III

MANITOBA				SASKATCHEWAN				ALBERTA				PRAIRIE PROVINCES			
Year	Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted	Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted		Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted		Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted	Year
1953	2,355	26.6	63,000	2,745	30.6	84,000		3,489	33.0	115,000		8,599	30.5	262,000	1953
1952	2,165	32.8	71,000	2,644	34.8	92,000		3,336	35.4	118,000		8,145	34.5	281,000	1952
1951	2,040	26.5	56,000	2,561	30.8	73,000		3,011	36.2	105,000		7,530	31.1	234,000	1951
1950	1,717	32.0	55,000	1,954	23.5	46,000		2,534	22.1	56,000		6,205	25.3	157,000	1950
1949	1,699	23.5	40,000	1,800	18.3	33,000		2,118	17.0	36,000		5,617	19.4	109,000	1949
1948	1,540	29.2	45,000	2,316	18.1	42,000		2,226	24.7	55,000		6,092	23.3	142,000	1948
1947	1,901	17.9	34,000	2,780	16.2	45,000		2,354	22.1	52,000		7,035	18.6	131,000	1947
1946	1,697	25.3	43,000	2,317	18.6	43,000		1,783	26.9	48,000		5,797	23.1	134,000	1946
1945	2,139	24.5	52,500	2,672	20.4	54,500		2,048	18.1	37,000		6,859	21.0	144,000	1945
1944	2,123	25.8	54,700	2,698	26.7	72,000		1,942	26.6	51,700		6,763	26.4	178,400	1944
1943	2,341	29.0	68,000	3,316	24.1	80,000		2,239	25.0	56,000		7,896	25.8	204,000	1943
1942	2,021	36.6	74,000	2,468	37.3	92,000		1,925	39.0	75,000		6,414	37.6	241,000	1942
1941	1,531	26.1	40,000	1,661	16.1	26,700		1,543	18.1	28,000		4,735	20.0	94,700	1941
1940	1,256	21.9	27,500	1,251	18.8	23,500		1,115	28.7	32,000		3,622	22.9	83,000	1940
1939	1,344	20.8	28,000	1,149	22.6	26,000		1,114	24.2	27,000		3,607	22.5	81,000	1939
1938	1,355	22.9	31,000	1,207	16.6	20,000		1,125	26.0	29,200		3,687	21.8	80,200	1938
1937	1,393	25.0	34,800	1,174	4.7	5,518		995	22.2	22,100		3,562	17.5	62,418	1937
1936	1,423	13.3	18,990	1,302	12.8	16,627		999	17.0	17,000		3,724	14.1	52,617	1936
1935	1,121	20.6	23,100	1,146	20.2	23,149		920	17.8	16,376		3,187	19.7	62,625	1935
1934	1,125	15.4	17,298	1,088	11.4	12,403		749	20.1	15,041		2,962	15.1	44,742	1934
1933	1,173	14.4	16,900	1,228	14.3	17,560		631	20.3	12,783		3,032	15.6	47,243	1933
1932	1,123	17.8	20,014	1,330	17.6	23,400		701	28.1	19,700		3,154	20.0	63,114	1932
1931	1,129	13.6	15,400	1,375	10.4	14,340		710	23.3	20,800		3,214	15.7	50,540	1931
1930	1,991	25.1	49,974	2,016	20.1	40,522		748	25.4	18,999		4,755	23.0	109,495	1930
1929	2,182	16.7	36,518	2,229	13.8	30,755		704	17.8	12,514		5,114	15.6	79,787	1929
1928	1,937	27.1	52,569	1,621	27.3	44,266		546	29.1	15,849		4,104	27.5	112,684	1928
1927	1,512	24.3	36,717	926	20.3	27,129		400	30.0	12,000		2,838	26.7	75,846	1927
1926	1,761	28.9	50,880	872	25.1	21,891		416	22.1	9,146		3,048	26.9	81,917	1926
1925	1,645	23.8	39,213	858	21.1	18,105		437	25.8	11,273		2,940	23.3	68,591	1925
1924	1,373	29.8	40,923	954	18.2	17,360		494	25.0	12,347		2,291	25.0	70,630	1924
1923	1,156	22.3	25,726	640	30.1	19,278		384	38.5	14,774		2,180	27.4	59,778	1923
1922	969	29.8	28,863	636	29.0	18,511		378	16.5	6,238		1,983	27.0	53,612	1922
1921	1,043	18.9	19,682	498	26.8	13,343		568	20.5	11,657		2,109	21.2	44,682	1921
1920	899	20.9	17,520	519	20.2	10,502		481	26.5	12,739		1,839	22.2	40,760	1920
1919	894	19.2	17,149	493	18.2	8,971		414	25.5	10,562		1,801	20.4	36,682	1919

MANITOBA				SASKATCHEWAN				ALBERTA				PRAIRIE PROVINCES			
Year	Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted	Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted		Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted		Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted	Year
1918	1,103	25.4	27,963	699	17.0	11,888		470	16.5	7,756		2,272	21.0	47,607	1918
1917	708	22.5	15,930	670	21.0	14,068		472	22.0	10,386		1,850	21.8	40,384	1917
1916	688	20.0	13,729	367	27.0	9,916		337	29.0	9,774		1,391	24.0	33,419	1916
1915	567	29.4	16,658	300	31.9	9,523		304	32.3	9,822		1,171	30.7	36,003	1915
1914	468	21.0	9,828	290	16.9	4,901		178	27.0	4,806		936	20.9	19,535	1914
1913	496	28.8	14,305	332	31.3	10,421		197	32.2	6,334		1,025	30.3	31,060	1913
1912	481	32.9	15,826	292	32.9	9,595		187	33.0	6,179		860	32.9	31,500	1912
1911	448	33.4	14,967	274	31.6	8,658		164	26.5	4,349		668	31.6	27,974	1911
1910	416	15.7	6,517	130	23.6	3,061		121	20.4	2,480		667	18.1	12,058	1910
1909	606	30.0	20,866	135	33.3	4,493		186	32.3	5,999		1,077	30.8	31,358	1909
1908	662	25.8	17,093	81	24.1	1,952		130	29.9	3,881		823	26.3	22,926	1908
1907	650	25.8	16,753	70	17.0	1,350		55	19.8	1,082		784	24.5	19,185	1907
1906	474	37.0	17,533	54	24.6	1,316		74	29.3	2,157		601	34.9	21,007	1906
1905	432	32.5	14,064	83	27.1	893		65	27.5	1,773		588	31.6	16,731	1905
1904	361	31.0	11,178	43	25.6	1,103		43	25.6	1,103		447	29.9	13,384	1904
1903	327	26.7	8,707	55	25.4	921		35	26.4	921		386	26.6	10,549	1903
1902	330	35.9	11,848	10	23.9	435		18	23.9	435		386	34.7	12,718	1902
1901	191	34.2	6,536	10	36.8	369		10	36.8	369		216	34.5	7,274	1901
1900	155	18.9	2,939	8	20.7	176		8	20.7	177		172	19.1	3,293	1900
1899	183	29.4	5,379	7	23.62	169		7	23.62	169		197	29.0	5,717	1899
1898	158	27.06	4,278	9	26.29	225		9	26.29	225		175	27.0	4,728	1898
1897	169	20.77	3,184	8	20.0	167		8	20.0	167		169	31.5	3,518	1897
1896	120	24.8	3,172	8	22.0	179		8	22.0	179		144	24.5	3,530	1896
1895	154	36.69	5,645	8	22.0	174		8	22.0	174		190	35.2	5,993	1895
1894	120	25.87	2,982	8	12.0	93		8	12.0	92		135	23.4	3,168	1894
1893	115	22.11	2,548	7	18.0	135		7	18.0	135		138	21.6	2,818	1893
1892	98	29.0	2,832	7	20.0	146		7	20.0	146		113	27.6	3,124	1892
1891	90	35.6	3,198	7	15.0	106		7	15.0	106		113	32.8	3,410	1891
1890	66	31.33	2,069	7	18.0	123		7	18.0	123		98	28.9	2,315	1890
1889	80	13.1	1,052	7	12.0	80		7	12.0	80		93	13.1	1,212	1889
1888	69	30.0	2,045	6	20.0	129		6	20.0	128		91	28.4	2,303	1888
1887	58	34.31	1,925	6	18.0	112		6	18.0	112		86	31.6	2,149	1887
1886	70	18.70	1,301	6	16.0	96		6	16.0	96		82	18.2	1,493	1886
1885	51	29.0	1,113	6	22.2	129		6	22.2	129		63	21.8	1,371	1885
1884	41	32.83	1,364	4	20.0	86		4	20.0	86		49	31.3	1,536	1884
1883	60	30.0	1,898	3	20.0	55		3	20.0	55		55	30.9	2,008	1883
1880	13	20.0	254	1	20.0	24		1	20.0	24		15	20.1	302	1880
1878															1878

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LONGTIME ACREAGE, YIELD AND PRODUCTION OF OATS

APPENDIX IV

MANITOBA					SASKATCHEWAN					ALBERTA					PRAIRIE PROVINCES				
Year	Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted		Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted			Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted			Acreage 000's omitted	Yield per acre bus.	Produc- tion bushels 000's omitted		Year
1953	1,412	37.5	53,000		2,721	40.4	110,000			2,357	46.7	110,000			6,490	42.1	273,000		1953
1952	1,611	40.3	65,000		3,362	45.2	152,000			2,587	49.9	129,000			7,560	45.8	346,000		1952
1951	1,740	32.8	58,000		3,575	39.7	148,000			2,639	48.9	134,000			8,312	40.9	340,000		1951
1950	1,610	43.5	70,000		3,381	33.1	112,000			2,455	29.3	72,000			7,446	34.1	254,000		1950
1949	1,703	31.1	53,000		3,381	25.1	85,000			2,255	23.0	52,000			7,339	25.9	190,000		1949
1948	1,491	40.2	60,000		3,652	24.4	89,000			2,392	31.4	75,000			7,535	28.7	224,000		1948
1947	1,381	28.2	39,000		3,983	20.1	80,000			2,534	29.6	75,000			7,898	24.6	194,000		1947
1946	1,439	34.7	50,000		4,329	23.1	100,000			2,754	35.2	97,000			8,522	29.0	247,000		1946
1945	1,697	32.1	54,500		5,717	25.0	143,000			3,335	22.8	76,000			10,749	25.4	273,500		1945
1944	1,615	37.8	61,000		5,640	35.1	198,000			3,192	35.0	111,800			10,447	35.5	370,800		1944
1943	1,632	38.6	63,000		6,482	30.9	200,000			3,676	35.1	129,000			11,790	33.2	392,000		1943
1942	1,480	47.3	70,000		4,902	52.0	255,000			3,284	53.3	175,000			9,666	51.7	500,000		1942
1941	1,308	31.9	41,700		4,030	18.0	72,500			2,799	22.8	63,800			8,137	21.9	178,000		1941
1940	1,293	25.5	33,000		3,880	24.0	93,000			2,645	38.9	103,000			7,818	29.3	229,000		1940
1939	1,377	25.18	34,500		4,144	27.0	112,000			2,706	31.4	85,000			8,227	28.1	231,500		1939
1938	1,462	28.0	41,000		4,171	21.6	90,000			2,885	35.0	101,000			8,518	27.2	232,000		1938
1937	1,410	30.5	43,075		4,380	5.1	22,338			2,789	27.6	77,000			8,579	16.6	142,413		1937
1936	1,453	14.0	20,400		4,684	14.0	65,462			2,537	19.7	50,000			8,674	15.7	135,862		1936
1935	1,434	21.4	30,700		4,942	26.7	131,951			3,102	26.5	82,203			9,478	25.8	244,854		1935
1934	1,458	18.3	26,752		4,625	13.9	64,288			3,032	26.7	81,000			9,115	18.9	172,040		1934
1933	1,504	19.6	29,500		4,571	16.5	75,422			2,870	25.3	72,500			8,945	19.8	177,422		1933
1932	1,454	25.2	36,826		4,365	24.6	107,400			2,705	37.5	101,500			8,533	28.8	245,726		1932
1931	1,518	16.8	25,500		4,295	15.8	67,700			2,466	36.0	90,500			8,279	22.2	183,700		1931
1930	1,590	31.8	50,562		4,531	27.7	125,509			2,165	36.7	77,940			8,286	30.7	254,011		1930
1929	1,558	19.7	30,740		4,256	16.2	68,944			1,918	21.9	41,936			7,732	18.3	141,620		1929
1928	1,458	36.6	53,376		4,359	35.8	156,043			2,340	37.7	88,257			8,157	36.5	297,676		1928
1927	1,545	16.7	25,767		4,413	32.3	142,526			2,248	45.0	101,160			8,205	32.8	269,453		1927
1926	1,654	31.9	52,778		3,921	28.1	110,193			1,916	30.0	57,479			7,492	29.4	220,450		1926
1925	1,623	30.9	50,107		5,752	27.3	102,297			1,900	30.9	58,762			7,275	29.0	211,166		1925
1924	1,953	36.2	70,729		4,942	19.7	97,945			2,304	24.0	55,251			9,199	24.3	223,325		1924
1923	1,835	32.0	58,704		4,899	44.5	218,075			2,300	50.0	114,977			9,033	43.4	391,756		1923
1922	1,852	40.2	74,433		5,098	35.2	179,708			1,614	22.0	35,519			8,564	33.8	289,660		1922
1921	2,226	22.2	49,442		5,682	30.0	170,513			2,912	22.0	64,192			10,820	26.3	284,148		1921
1920	1,874	30.8	57,657		5,107	27.7	141,549			3,090	37.2	115,091			10,070	31.2	314,297		1920
1919	1,847	31.2	57,698		4,838	23.2	112,157			2,767	23.7	65,725			9,452	24.9	235,580		1919

	1918	1917	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907	1906	1905	1904	1903	1902	1901	1900	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1880	1878
Area	31.8	30.3	33.6	38.5	24.0	40.6	42.4	45.9	25.1	39.8	33.8	34.7	43.9	44.1	39.5	38.6	47.6	40.30	20.50	38.80	33.6	22.7	28.25	46.73	28.8	25.28	35.0	48.3	40.2	16.8	40.0	46.2	25.15	40.53	30.55	40.0	36.3	
Production	54,474	45,375	48,439	50,750	31,951	56,759	57,154	60,011	30,347	55,267	44,711	42,141	50,693	45,484	36,290	33,036	34,478	27,797	8,814	22,318	17,308	10,630	12,502	22,556	11,908	9,824	11,654	14,763	9,513	3,415	7,478	7,265	4,050	6,364	4,064	4,000	1,270	
Yield	1,715	1,500	1,444	1,317	1,331	1,398	1,348	1,307	1,289	1,990	1,323	1,214	1,166	1,091	944	855	728	690	429	575	616	468	442	483	414	389	399	366	298	219	187	155	161	157	133	100	33	
Value	4,988	4,522	3,792	3,336	2,520	2,358	2,556	2,388	1,888	1,847	986	882	840	450	349	294	287	153	117	90	70	66	69	59	56	52	46	45	41	38	34	27	24	13	7	1		
Price	107,253	123,214	163,278	145,066	61,816	114,112	117,537	107,542	58,923	91,796	29,205	23,325	23,965	19,213	10,902	9,450	7,103	7,412	2,817	3,120	2,027	1,861	1,887	1,483	1,004	1,044	1,067	1,079	1,086	605	858	707	570	697	314	177	40	
Price per bushel	21.5	27.3	43.1	43.5	24.5	41.4	46.0	46.1	31.2	49.7	31.4	29.1	37.5	42.7	31.3	32.2	34.4	48.4	24.1	34.81	28.93	28.0	30.0	25.0	18.0	20.0	22.0	24.1	20.0	16.0	25.0	23.0	21.0	29.6	25.0	25.0	25.0	
Price per bushel	2.652	2.538	2.124	1.827	1.502	1.639	1.481	1.461	983	820	519	306	306	243	174	147	103	78	58	45	95	43	31	30	28	26	24	23	21	19	17	15	13	12	6	3	1	
Price per bushel	22.8	34.0	48.1	45.9	38.0	43.7	46.3	48.3	21.6	46.8	43.9	30.1	39.1	39.2	31.3	32.2	34.4	48.4	24.1	34.81	28.93	28.0	30.0	25.0	18.0	20.0	22.0	24.1	20.0	16.0	25.0	23.0	21.0	29.6	25.0	25.0	25.0	
Price per bushel	60,323	86,289	102,199	83,876	57,076	71,542	67,630	58,985	16,894	38,376	22,802	9,248	13,137	9,514	5,463	4,729	3,558	3,701	1,409	1,566	1,013	930	944	741	501	521	537	549	542	303	428	353	285	349	157	88	20	
Price per bushel	9,355	8,560	7,359	6,481	5,353	5,792	5,366	4,861	3,881	4,657	2,772	2,322	2,132	1,724	1,467	1,298	1,036	919	604	716	620	567	566	572	498	467	465	374	288	276	236	201	188	152	110	35		
Price per bushel	23.7	29.8	42.7	43.2	28.2	41.9	45.2	46.6	27.4	45.7	34.9	32.2	41.2	43.0	35.9	36.4	43.6	42.3	21.6	38.0	32.8	23.7	28.6	43.3	27.0	24.4	32.7	43.8	37.2	15.6	36.8	41.4	24.4	38.5	29.8	39.9	38.0	
Price per bushel	222,050	254,877	313,916	279,692	150,843	242,413	242,321	226,538	106,164	185,439	96,718	74,714	87,795	74,211	52,656	47,215	45,139	38,910	13,040	27,004	20,348	13,420	15,333	24,780	13,413	11,389	13,258	16,391	11,141	4,323	8,764	8,325	4,905	7,410	4,535	4,265	1,330	

PRECIPITATION OVER PRAIRIE PROVINCES

Year	ALBERTA			SASKATCHEWAN			MANITOBA			THREE PROVINCES	
	Fall Season	Growing Season	Total	Fall Season	Growing Season	Total	Fall Season	Growing Season	Total	Weighted For Wheat Acreage	
1885	4.37	6.77	11.14	3.94	6.37	10.31	8.55	10.34	18.89	13.44	
1886	3.27	4.59	7.86	2.57	9.41	11.98	2.39	6.11	8.50	9.45	
1887	1.95	6.63	8.58	2.25	8.92	11.17	3.50	11.91	15.41	11.72	
1888	3.13	11.48	14.61	3.53	8.22	11.75	3.72	9.39	13.11	13.15	
1889	2.55	5.12	7.67	3.29	5.72	9.01	3.54	5.07	8.61	8.43	
1890	1.62	6.47	8.09	2.02	9.34	11.36	3.53	9.90	13.43	10.96	
1891	5.46	8.27	13.73	5.71	9.89	15.60	8.34	10.41	18.75	16.03	
1892	2.46	5.57	8.03	3.82	7.34	11.16	5.55	10.05	15.60	11.60	
1893	2.10	7.94	10.04	3.82	6.18	10.00	9.33	13.78	11.27	11.27	
1894	4.15	7.62	11.77	3.09	4.97	8.06	3.52	7.39	10.91	10.25	
1895	4.37	7.97	12.34	2.98	8.30	11.28	4.10	10.01	14.11	12.58	
1896	2.20	6.83	9.03	2.30	10.49	12.79	3.27	13.12	16.39	12.74	
1897	3.06	9.09	12.15	3.14	6.68	9.82	4.46	7.41	11.87	11.28	
1898	2.90	6.41	9.31	3.08	6.88	9.96	3.41	7.67	11.08	10.87	
1899	3.98	10.73	14.71	5.75	8.21	13.96	7.34	9.83	17.17	16.59	
1900	9.63	9.67	19.30	5.10	5.25	10.35	4.47	4.85	9.32	9.68	
1901	6.70	11.16	17.86	6.54	11.09	17.63	9.23	12.70	21.93	21.06	
1902	3.86	12.80	16.66	4.35	10.41	14.76	5.30	10.20	15.50	15.34	
1903	3.51	6.96	10.47	2.36	9.91	12.27	2.94	9.15	12.09	12.10	
1904	5.79	4.81	10.60	5.25	6.89	12.14	6.52	8.68	15.20	14.29	
1905	3.81	8.18	11.99	3.13	9.05	12.18	3.79	8.88	12.67	12.50	
1906	2.94	9.83	12.77	3.39	9.58	14.97	5.58	11.06	16.64	15.93	
1907	3.38	7.17	10.55	3.31	6.18	9.49	5.94	9.86	14.97	9.73	
1908	5.39	10.52	15.91	5.12	7.40	12.52	5.63	7.46	13.09	12.91	
1909	3.40	9.51	12.91	3.80	11.36	15.16	4.24	8.05	12.29	13.96	
1910	1.83	5.03	6.86	2.46	6.69	9.15	2.79	5.93	8.72	8.74	
1911	5.02	10.34	15.36	3.10	8.14	11.24	3.95	8.75	12.70	12.35	
1912	6.40	7.47	13.87	4.98	8.79	13.77	7.59	10.37	17.96	14.97	
1913	4.17	8.20	12.37	4.64	7.37	12.01	6.57	6.29	12.86	12.29	
1914	4.40	7.10	11.50	4.47	5.70	10.17	5.36	8.15	13.51	11.29	
1915	6.17	13.05	19.22	4.26	8.15	12.41	4.42	8.02	12.44	13.44	
1916	4.15	9.94	14.09	2.85	10.71	13.56	5.16	9.25	14.41	13.83	
1917	6.34	7.41	13.75	5.09	4.47	9.56	5.82	5.68	11.50	10.80	
1918	4.08	4.98	9.06	3.14	5.10	8.24	3.58	7.45	11.03	8.95	
1919	3.75	5.48	9.23	3.02	5.60	8.62	4.69	8.07	12.76	9.45	

1920	5.08	8.13	13.21	4.46	6.82	11.28	5.28	5.69	10.97	11.66
1921	2.75	7.12	9.87	4.05	9.94	13.99	5.31	8.44	13.75	12.99
1922	2.97	6.31	9.34	5.20	6.31	11.51	7.02	8.02	15.04	11.45
1923	3.19	11.26	14.45	4.19	10.79	14.98	5.59	8.09	13.68	14.65
1924	3.14	6.94	10.08	2.84	4.93	7.77	3.61	8.81	12.42	8.91
1925	5.01	6.64	11.65	4.58	7.36	11.94	6.79	7.57	14.36	12.07
1926	6.82	5.84	12.66	4.54	5.80	10.34	5.75	6.87	12.62	11.19
1927	6.86	11.54	18.40	4.71	10.58	15.29	8.71	11.12	19.83	16.64
1928	5.62	9.13	14.75	5.20	7.71	12.91	6.71	10.67	17.38	13.98
1929	3.03	6.53	9.56	1.75	5.32	7.07	2.75	5.57	8.32	7.96
1930	2.79	7.82	10.61	2.16	6.85	9.01	3.55	9.51	13.06	9.86
1931	3.89	7.71	11.60	4.30	4.77	9.07	2.80	5.04	7.94	9.74
1932	4.07	9.34	13.41	4.39	8.39	12.78	6.04	8.48	14.52	13.14
1933	4.21	7.06	11.27	3.93	7.13	11.06	5.18	6.71	11.89	11.20
1934	4.25	6.55	10.80	4.58	5.79	10.37	5.59	4.90	10.49	11.55
1935	3.58	7.70	11.28	2.36	8.03	10.39	4.55	12.69	17.24	12.65
1936	3.53	5.28	8.81	3.39	4.99	8.38	4.87	4.89	9.76	9.46
1937	3.88	6.27	10.15	2.49	4.48	6.97	3.36	9.13	12.49	9.89
1938	4.59	5.96	10.55	3.23	6.37	9.60	5.01	5.93	10.94	10.47
1939	4.20	8.59	12.79	4.62	8.15	12.77	3.22	7.79	11.01	12.56
1940	3.32	8.54	11.86	1.89	7.41	9.30	3.95	8.74	12.69	10.54
1941	3.51	6.65	10.16	2.98	7.22	10.20	5.69	10.85	16.54	10.99
1942	4.58	10.75	15.33	3.43	10.13	13.56	8.33	9.17	17.50	14.48
1943	4.00	6.11	10.11	4.59	6.12	10.71	5.26	10.45	15.71	11.00
1944	3.22	7.58	10.80	3.37	7.86	11.23	3.64	11.76	15.40	11.54
1945	3.24	6.95	10.19	3.37	6.50	9.87	6.51	8.75	15.26	10.49
1946	4.36	6.96	11.32	3.98	6.12	10.10	5.14	6.80	11.94	10.65
1947	5.46	7.12	12.58	4.61	7.45	12.06	5.32	13.01	18.33	12.90
1948	6.27	8.40	14.67	5.39	6.68	12.07	6.05	12.10	18.15	13.43
1949	1.80	6.00	7.80	1.68	6.50	8.18	3.06	9.33	12.39	9.35
1950	2.42	6.27	8.69	2.78	8.05	10.83	5.07	12.23	17.30	10.81
1951	4.10	10.91	15.01	3.14	7.43	10.57	4.95	6.58	11.53	11.83
1952	6.50	7.43	13.93	6.52	7.16	13.68	5.83	7.42	13.25	13.71
1953	2.86	11.00	13.86	3.30	10.12	13.42	3.90	13.09	16.99	13.85
1954	3.20			3.18			4.00			
Longtime Averages	4.08	7.88	11.96	3.79	7.54	11.33	5.01	8.68	13.69	12.05

(The fall rains are for the months of August, September and October, immediately preceding the next year's summer rains.) These figures are taken from the Searle rainfall reports from some 600 rain gauges throughout the West, and from historical records compiled by the Searle Grain Co. Ltd.

APPENDIX VI

CANADIAN EXPORTS OF WHEAT, OATS AND BARLEY

In Bushels

(000's omitted)

Crop Year	Wheat and Flour	Oats	Barley	Crop Year	Wheat and Flour	Oats	Barley
1952-53	385,905	64,857	118,857	1915-16	269,157	56,286	8,855
1951-52	355,825	69,579	69,915	1914-15	86,750	13,651	2,886
1950-51	240,961	34,717	23,075	1913-14	135,587	36,521	12,299
1949-50	224,855	20,546	17,523	1912-13	115,744	15,066	9,431
1948-49	232,329	18,245	21,729	1911-12	97,600	11,541	2,643
1947-48	194,982	10,202	2,678	1910-11	62,398	7,819	1,155
1946-47	239,420	29,758	6,903	1909-10	67,808	7,820	2,080
1945-46	343,185	43,860	4,416	1908-09	56,661	7,294	2,933
1944-45	342,945	85,797	39,406	1907-08	28,330	4,539	1,198
1943-44	343,755	74,737	36,103	1906-07	44,646	2,700	880
1942-43	214,700	63,323	33,760	1905-06	17,368	2,367	1,041
1941-42	225,828	11,861	2,057	1904-05	21,009	4,695	1,057
1940-41	231,206	13,649	2,721	1903-04	35,835	7,593	947
1939-40	192,674	23,589	10,677	1902-03	29,034	5,030	457
1938-39	160,034	12,933	14,820	1901-02	13,207	8,155	2,386
1937-38	95,585	8,226	14,744	1900-01	18,892	6,929	2,156
1936-37	209,772	9,500	17,555	1899-00	12,739	10,312	238
1935-36	254,424	15,515	7,675	1898-99	23,050	9,876	443
1934-35	165,751	17,863	15,056	1897-98	8,965	6,546	1,831
1933-34	194,779	9,141	1,710	1896-97	10,321	968	840
1932-33	264,304	14,419	5,391	1895-96	9,295	926	1,708
1931-32	207,029	18,010	13,538	1894-95	10,197	2,818	597
1930-31	258,693	11,476	19,194	1893-94	10,192	7,273	2,040
1929-30	186,267	4,169	2,604	1892-93	9,797	6,414	5,202
1928-29	407,564	16,310	40,147	1891-92	2,925	260	4,892
1927-28	332,963	14,865	26,442	1890-91	814	757	9,975
1926-27	292,880	8,701	38,795	1889-90	848	337	9,948
1925-26	324,592	36,826	34,180	1888-89	3,196	566	9,370
1924-25	192,721	38,460	27,771	1887-88	7,187	2,046	9,456
1923-24	346,521	43,301	15,396	1886-87	4,476	4,149	8,554
1922-23	279,364	25,905	13,842	1885-86	2,729	2,359	9,067
1921-22	185,769	29,893	12,422	1884-85	1,460	1,346	7,780
1920-21	167,215	31,761	10,816	1883-84	7,486	1,024	8,817
1919-20	92,499	17,162	9,816	1882-83	5,513	4,146	11,588
1918-19	96,960	15,679	7,925	1881-82	4,215	2,926	8,800
1917-18	169,240	32,548	6,553	1880-81	7,112	4,717	7,239
1916-17	174,565	68,204	7,873				

In Bushels (000's omitted)

	Wheat and flour	Oats	Barley
Total for 74 years	10,070,604	1,333,361	924,874
Average per year	136,089	18,018	12,498
Per cent of exports of total production	64.2	11.2	21.6

References:

- 1874-1910 (Grain Statistics, Part V, Department of Trade and Commerce, 1910)
- 1908-09 to 1948-49 (Vital Grain Statistics, Published by Dom. Bureau of Statistics.)
- 1950-51 to 1952-53 (Sanford Evans Grain Trade Year Book, 1952-53)

APPENDIX VII

CANADIAN WHEAT "CARRY-OVER" As of August 1st each year

IN BUSHELS
(000's omitted)

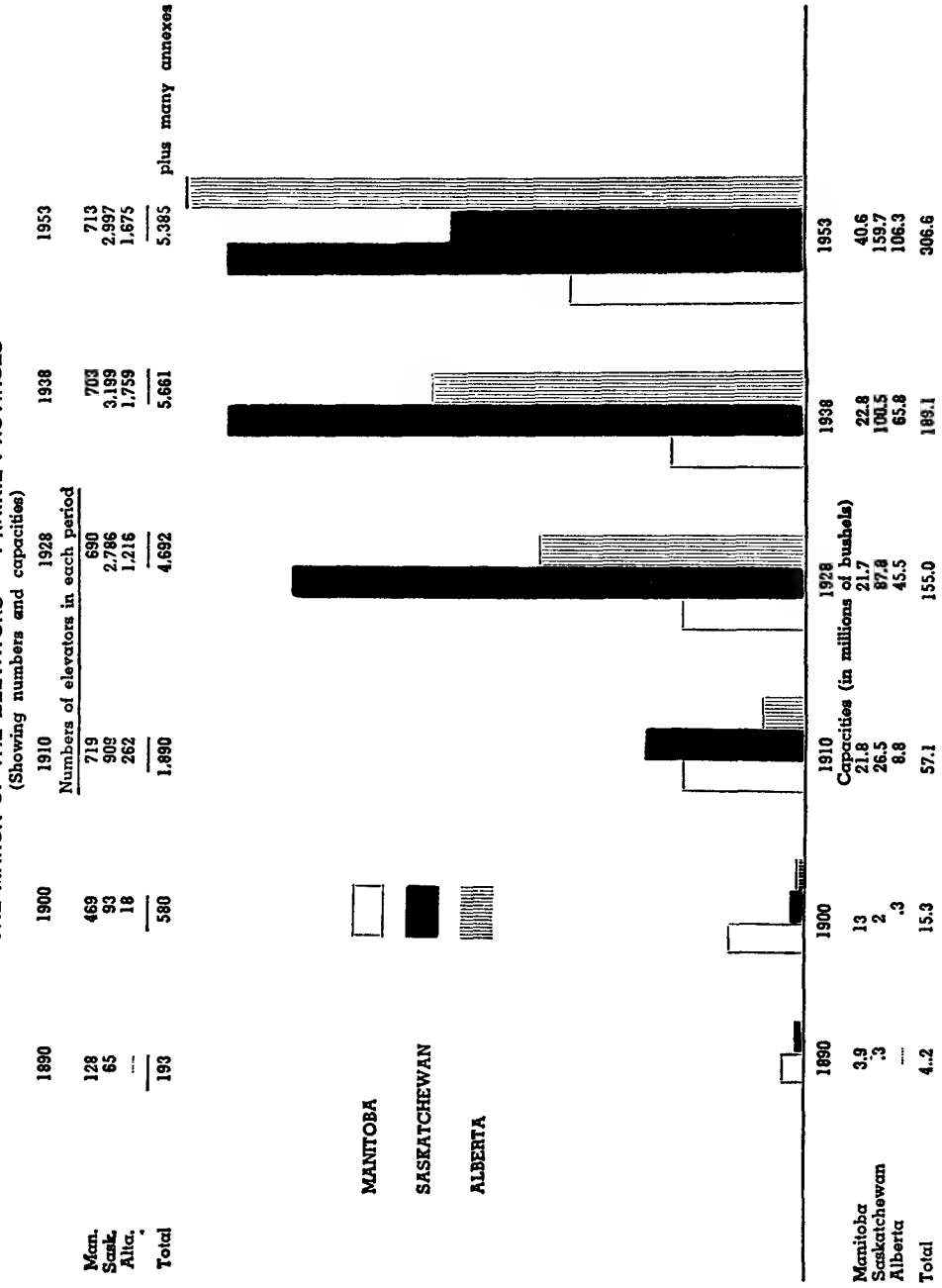
1916	—	7,500	1935	—	214,000
1917	—	3,900	1936	—	127,000
1918	—	5,400	1937	—	37,000
1919	—	9,200	1938	—	25,000
1920	—	24,000	1939	—	103,000
1921	—	39,000	1940	—	300,000
1922	—	32,000	1941	—	480,000
1923	—	47,000	1942	—	423,000
1924	—	33,000	1943	—	595,000
1925	—	42,000	1944	—	357,000
1926	—	58,000	1945	—	258,000
1927	—	94,000	1946	—	74,000
1928	—	130,000	1947	—	87,000
1929	—	130,000	1948	—	78,000
1930	—	141,000	1949	—	102,000
1931	—	138,000	1950	—	112,000
1932	—	219,000	1951	—	189,000
1933	—	203,000	1952	—	217,000
1934	—	215,000	1953	—	369,000

References:

- (1) Prior to 1916, there were but insignificant "carry-overs" each year. Canadian bins were cleared to within a few millions of bushels.
- (2) 1916-1935 — Statistics presented to the Royal Grain Inquiry Commission, 1938, by James McAnsh, Statistician, Canadian Wheat Board, Winnipeg.
- (3) From 1935 to 1953, figures taken from Sanford Evans Statistical Service, Grain Trade Year Books.

APPENDIX VIII

THE MARCH OF THE ELEVATORS — PRAIRIE PROVINCES



APPENDIX IX

MONEY PRICE OF WHEAT AND PRICE CALCULATED TO PURCHASING POWER FROM 1935-39

Crop Year	Average Yearly Price Wheat Cents per Bushel Basis No. 1 Nor. Fort William	Cost Prairie Farmers' Living and Production Base 1935-39=100 Index Numbers	Price Basis Purchasing Power Bushel Wheat 1935-39
	\$ ¢		\$ ¢
1890-91	90.4	65.5	1.38
1891-92	87.0	65.5	1.32
1892-93	74.9	60.8	1.23
1893-94	65.6	61.7	1.06
1894-95	71.0	57.7	1.23
1895-96	61.1	56.5	1.08
1896-97	72.6	54.6	1.33
1897-98	98.9	55.5	1.78
1898-99	72.4	58.0	1.25
1899-1900	69.8	59.2	1.18
1900-01	79.5	61.0	1.30
1901-02	72.7	62.2	1.17
1902-03	74.9	65.1	1.15
1903-04	86.2	65.9	1.31
1904-05	97.4	66.7	1.46
1905-06	77.5	68.7	1.13
1906-07	79.5	69.0	1.15
1907-08	1.04.7	74.6	1.40
1908-09	1.16.1	74.5	1.56
1909-10	1.02.4	75.7	1.35
1910-11	96.6	76.6	1.26
1911-12	1.00.8	79.2	1.27
1912-13	84.4	83.3	1.01
1913-14	89.4	83.6	1.07
1914-15	1.32.3	88.0	1.50
1915-16	1.13.3	96.9	1.17
1916-17	2.05.6	125.3	1.64
1917-18	2.21.	146.7	1.51
1918-19	2.24.1	157.7	1.42
1919-20	2.63.	179.5	1.47
1920-21	1.99.3	151.9	1.31
1921-22	1.29.7	134.0	.97
1922-23	1.10.5	130.9	.84
1923-24	1.07.0	130.8	.82
1924-25	1.68.5	130.0	1.30
1925-26	1.51.2	127.8	1.18
1926-27	1.46.2	126.9	1.15
1927-28	1.46.3	126.1	1.16
1928-29	1.24.0	123.7	1.00
1929-30	1.24.2	116.7	1.06

APPENDIX IX (Continued)

MONEY PRICE OF WHEAT AND PRICE CALCULATED TO PURCHASING POWER FROM 1935-39

Crop Year	Average Yearly Price Wheat Cents per Bushel Basis No. 1 Nor. Fort William	Cost Prairie Farmers' Living and Production Base 1935-39=100 Index Numbers	Price Basis Purchasing Power Bushel Wheat 1935-39
	\$ ¢		\$ ¢
1930-31	64.2	103.4	.62
1931-32	59.8	97.4	.60
1932-33	54.2	93.9	.58
1933-34	68.1	97.1	.70
1934-35	81.7	96.9	.84
1935-36	84.6	98.4	.85
1936-37	1.22.7	103.1	1.18
1937-38	1.31.6	101.9	1.29
1938-39	62	99.7	.62
1939-40	76.5	107.	.71
1940-41	74	113.4	.65
1941-42	76.6	123.7	.61
1942-43	94.7	131.5	.71
1943-44	1.37.1	133.8	1.02
1944-45	1.43.6	137.8	1.04
1945-46	1.83.3	140.7	1.30
1946-47	1.83.3	149.2	1.22
1947-48	1.83.3	170.6	1.07
1948-49	1.83.3	187.1	.97
1949-50	1.83.3	190.7	.96
1950-51	1.85.5	207.2	.89
1951-52	1.83.6	226.5	.81
1952-53	1.81.7	224.7	.80

References:

The annual average prices are from the official figures registered by the Winnipeg Grain Exchange and published by the Sanford Evans Statistical Service in their annual year books.

The index numbers of the cost of Prairie farmers' living and production, base 1935-39, are taken from the Dominion Bureau of Statistics publication entitled, "Price Index Numbers of Commodities and Services Used by Farmers 1913-1948," revised on July 21st, 1948 and from similar publications since issued quarterly.

The prices basis 1935-39, are arrived at by dividing the money prices for No. 1 Northern Fort William by the index number of the cost of farmers' living and production, base 1935-39 = 100.

The index numbers of the cost of farmers' living and production from 1890-91 to 1912-13 inclusive, are taken from "Wholesale Commodity Price Index base 1935-39," for during this period, there were no price index numbers published of the cost of farmers' living and production. It is estimated, however, that there is very little difference between wholesale price index numbers and the cost of farmers' living and production.

CHRONOLOGICAL TABLE OF IMPORTANT PRAIRIE EVENTS

1615	Discovery of Great Lakes by Champlain.
1668 (Aug. 4)	Arrival of the ship, the "NONSUCH" at Hudson Strait.
1670	Charter granted by Charles II to Hudson's Bay Company, giving the Company possession of Rupert's Land.
1679	First ship, the "GRIFFON" to sail Great Lakes.
1691	First white man, Henry Kelsey, employee of the Hudson's Bay Company, to see prairies and open plains.
1784	Exploration of the prairies by David Thompson of the Hudson's Bay Company.
1812	Arrival of the settlers from Scotland at Selkirk, Manitoba.
1814	Peace on Great Lakes between Britain and United States of America.
1816	First steamship, the "FRONTENAC" to sail Great Lakes.
1829 (Nov. 27)	First Canadian schooner, "ANNIE AND JANE" to sail across Great Lakes through St. Lawrence, and to the Atlantic Ocean.
1830	First Experimental Farm on banks of Assiniboine set up by the Hudson's Bay Company.
1849	Census reveals 5,291 people, mainly half-breeds, in Manitoba.
1857-60	Explorations of the prairies by Captain Palisser and Henry Yule Hind.
1869	Setting up by Louis Riel of the Manitoba Provincial Government.
1869	Surrender of the Charter to Rupert's Land by the Hudson's Bay Company back to the British Crown.
1870 (July 15)	Rupert's Land transferred to Canada by British Government.
1870	Introduction to prairies of Red Fife wheat.
1871	John MacDougall first to bring cattle to southern Alberta.
1871 (Mar. 1)	Canada makes formal provision for homestead entries in Manitoba and North West Territories.
1871-77	Making of seven treaties with tribes of Indians in Manitoba and North West Territories.
1871	Census revealed 12,228 people, mainly half-breeds, in Manitoba.
1872	First chartered bank established in the West, the Merchants Bank.
1872	Exploration of the prairies by John Macoun.
1874	Arrival of the Mennonite Settlers from Russia around Niverville, Manitoba.
1876	First shipment of wheat from Western Canada of 857 1/6 bushels of Red Fife.

CHRONOLOGICAL TABLE OF IMPORTANT PRAIRIE EVENTS (Continued)

- 1878 (Nov. 7)** Winnipeg joined to the United States by a railroad from Fort Garry to Pembina.
- 1879** Construction of first elevator in Western Canada at Niverville, Manitoba.
- 1880** Disappearance of practically all the buffalo from Western plains.
- 1881** Ogilvie's Mill in Winnipeg equipped with Hungarian rollers.
- 1881** Census reveals population of Manitoba 65,954 people. Population of Winnipeg 7,985.
- 1881** Population of the N.W.T. (now Alberta and Saskatchewan) 5,800 Whites and Metis together and 49,472 Indians.
- 1883** First of a series of bad drought years.
- 1883** First Canadian Terminal Elevator, christened "King" erected on the Great Lakes at Port Arthur.
- 1884** First shipment of wheat to Britain by an all-Canadian route, 1,000 bushels of Manitoba No. 1 Hard.
- 1885** North West Rebellion.
- 1885** First Terminal Elevator "A" erected at Fort William by Canadian Pacific Railway.
- 1885** Joining of the Atlantic and Pacific by Canadian Pacific Railway.
- 1886** Discovery in Western Canada of the value of summer-fallowing.
- 1887 (Nov. 24)** Formation of Winnipeg Grain and Produce Exchange.
- 1887** Winnipeg Grain Exchange started.
- 1888** Dominion Experimental Farms established in the West.
- 1896** First Line Elevator Company "The Northern" established in West.
- 1900** First Royal Commission set up to investigate grain handling in the West. This was the forerunner of the present-day "Canada Grain Act" and of the Board of Grain Commissioners.
- 1904** Start of the Canadian Seed Growers' Association.
- 1904** "Futures" market started on Winnipeg Grain Exchange.
- 1910** Introduction of Marquis wheat.
- 1911** Seager Wheeler of Rosthern, Sask., wins World's Championship for wheat at International Hay and Grain Show at Chicago.
- 1914** Panama Canal opened and Grain Terminal built at Vancouver by Dominion Government.
- 1914** Grand Trunk Pacific joined Atlantic with Prince Rupert, B.C.
- 1915** Canadian Northern Transcontinental Railroad joined the Atlantic to the Pacific at Vancouver.

CHRONOLOGICAL TABLE OF IMPORTANT PRAIRIE EVENTS **(Continued)**

1915	Prairies produced for the first time over 300 million bushels of wheat.
1917	First shipment of prairie wheat to the United Kingdom via the Panama Canal from Vancouver by American freighter, the "WAR VICEROY".
1921	Start of "The Agricultural Institute of Canada."
1922-23	Setting up of the three Prairie Wheat Pools.
1925	Setting up of the Dominion Rust Research Laboratory at Winnipeg.
1928	Prairies produced for first time over 500 million bushels of wheat.
1929	Hudson's Bay Railway reached Churchill.
1930	Grain Elevator constructed at Churchill.
1931 (Sept.)	Two steamers, the "FARNWORTH" and the "WALK-WORTH" took shipments of wheat from Churchill to England and Antwerp.
1935	Introduction of "Thatcher", the first rust-resistant wheat.
1943 (Sept.)	Suspension of trading on Winnipeg Grain Exchange. Start of Compulsory State Marketing.
1946	Introduction of "Rescue", first wheat resistant to saw-flies.
1951	Census revealed people of 37 different racial origins settled in the West.
1952	Prairies produce over 600 million bushels of wheat.
1954	Introduction of "Selkirk" wheat resistant to 15-B rust.

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ILL			
OCT 8 RETURN		JUL 4 RETURN	
CIRC AU 25 '73			
		CIRC AUG 1 '9 '77	
CIRC AP 30 '74			
OCT 18 RETURN		AUG 9 RETURN	
CIRC DE 1 '73		CIRC OCT 30 '77	
OCT 30 RETURN			
		OCT 26 RETURN	
CIRC JA 3 '74		DUE CAM NOV 05 '79	
NOV 21 RETURN		NOV 05 RETURN	
JAN 2 RETURN			
CIRC DE 12 '74		DUE CAM NOV 24 '79	
DEC 7 RETURN		NOV 15 RETURN	
		DUE CAM DEC 23 '79	
CIRC JUN 12 '75		DEC 19 RETURN	
		DUE CAM OCT 29 '81	
CIRC JUN 12 '75		OCT 19 RETURN	
JUN 12 RETURN		DUE CAM APR 27 '83	
		MAR 18 RETURN	

DATE DUE SLIP

DUE CAM AUG 30 '98

JUL 25 RETURN

Due Cam OCT 13 '98

OCT 11 RETURN

Strange

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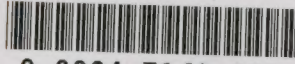
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